

National Park Service  
U.S. Department of the Interior

Wilson's Creek National Battlefield  
Missouri

Clemson University




3 1604 015 433 404

# Wilson's Creek National Battlefield

Draft General Management Plan  
Environmental Impact Statement





Digitized by the Internet Archive  
in 2012 with funding from  
LYRASIS Members and Sloan Foundation

<http://archive.org/details/draftgeneralmana02wilson>

**Draft**  
**General Management Plan**  
**Environmental Impact Statement**  
**May 2002**

---

**Wilson's Creek National Battlefield • Missouri**

---

Wilson's Creek National Battlefield is about 10 miles south of the city of Springfield, Missouri, on the boundary between Greene and Christian Counties in the southwestern corner of the state. The park encompasses 1,750 acres, which includes 75% of the actual battlefield. The park was established on April 22, 1960, in order to preserve and commemorate the Battle of Wilson's Creek, the site of the second battle of the Civil War and the first major battle west of the Mississippi River. The park contains 50 archeological sites, many of which are associated with the battle, as well as a number of historic structures, cultural landscapes, and artifacts related to the battle. At the time of the battle, the valley of Wilson's Creek was a thriving agricultural area with several farms and the homes of numerous families. Only a few remnants of this agricultural community remain.

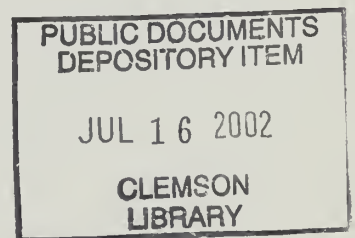
The purpose of this *Draft General Management Plan/Environmental Impact Statement* is to outline the specific resource conditions and visitor experiences desirable for the park and to propose alternate management strategies for achieving these goals. The *Draft General Management Plan/Environmental Impact Statement* will provide a framework to guide park management decision-making for the next 15 to 20 years. The plan presents three management alternatives for resource protection and visitor experience of the park. Two action alternatives are compared with the no-action alternative (alternative A), or continuation of existing conditions.

- **Alternative B – Wilson's Creek Battlefield Commemoration (Preferred Alternative).** Under this alternative, park management would focus on efforts to commemorate the Battle of Wilson's Creek and emphasize a reflective and contemplative visitor experience. Recreational use would be allowed but would be managed so as not to conflict with the core mission of the park or the primary visitor experience.
- **Alternative C – Wilson's Creek Civil War Research Center.** Under this alternative, park management would focus on Wilson Creek's distinctive combination of site integrity and artifact and archival collections in developing the park as an outstanding research center.

Scoping and public participation have been integral to this planning process. You may send comments on this document to the following address:

Superintendent Richard A. Lusardi  
Wilson's Creek National Battlefield  
6424 West Farm Road 182  
Republic, MO 65738

For further information about this document, please contact Gary Sullivan, Chief of Resource Management, Wilson's Creek National Battlefield, at (417) 732-2662 x286.







## SUMMARY

Wilson's Creek National Battlefield preserves a place of great significance to the history of the Civil War, the site of the war's second major battle and the first fought west of the Mississippi River. The park's 1,750 acres encompass 75 percent of the ground where, on August 10, 1861, 5,400 Union troops under General Nathaniel Lyon clashed in a brutal fight with 12,000 Confederate and Missouri State Guard soldiers under Generals Benjamin McCulloch and Sterling Price.

### **PURPOSE OF AND NEED FOR THE GENERAL MANAGEMENT PLAN**

The general management plan is the primary planning document for the National Park Service. The management planning process describes specific desirable resource conditions and visitor experiences for the park, assesses alternate management strategies for achieving these goals, and provides a framework to guide park management decision-making for the next 15 to 20 years.

Wilson's Creek National Battlefield has operated under the 1977 *Master Plan*. Since completion of the plan, the park and surrounding region have changed significantly. The visitor center and the tour-road loop both were constructed in the wake of the *Master Plan*. The population of the Springfield metropolitan area grew from 207,704 to 240,593 between 1980 and 1990, and increased to 281,767 by 1995. The population of Greene County increased from 152,928 to 218,095 between 1970 and 1995; that of Christian County grew from 15,124 to 38,433 in the same period. Regional population growth increases the potential for additional visitors and impacts on the park's cultural and natural resources. These and

other issues requiring management action, such as reconciling recreational use with the park's core mission, the impacts of encroaching suburban development, battlefield rehabilitation, resource management, and the need for regional cooperative planning, have been identified in consultation with park staff, local agencies, and the general public.

Both park staff and the general public expressed their desires for the park's future condition, which largely dovetail with the issues stated above. The identified future conditions include increased rehabilitation of the battlefield landscape, coordinated strategies for cultural and natural resource management, developing partnerships with neighboring landowners, coordinating park and regional planning, identifying recreational alternatives to Wilson's Creek National Battlefield, and ensuring that all visitors understand the significance of the national battlefield.

### **PURPOSE AND SIGNIFICANCE OF WILSON'S CREEK NATIONAL BATTLEFIELD**

During the first work sessions for the management plan, park planners refined the purpose and significance statements for the park. Based on a review of the park's enabling legislation and the professional expertise of park staff, National Park Service historians, and other subject matter experts, the park purpose and three significant topics were identified:

#### **Purpose**

- The purpose of Wilson's Creek National Battlefield is to commemorate the Battle of Wilson's

Creek and to preserve the associated battlefield.

## Significance

- Wilson's Creek National Battlefield is significant as the site of the second battle of the Civil War and the first major battle west of the Mississippi River.
- Wilson's Creek National Battlefield is the site of the death of General Nathaniel Lyon, the first Union general killed in the Civil War. Lyon's death focused national attention on the potential loss of Missouri to the Confederacy.
- Wilson's Creek's rural character evokes the setting experienced by the combatants.

## ALTERNATIVES

The management alternatives describe overall management concepts and the alternate ways in which the management prescriptions would be applied to the park.

### Management Prescriptions

The management prescriptions, or management areas, identify how different areas in the park would be managed to achieve a combination of desired resource conditions and visitor experiences. The following are the management areas designed for Wilson's Creek National Battlefield:

- Visitor Services and Administration
- Interpretive Focus
- Battlefield Landscape Enhancement
- Resource Preservation
- Landscape Maintenance

These management areas would be applied to the entire park, but the locations and size

of each management area would depend on the overall emphasis of each alternative. Table 1, Management Prescriptions and Identified Management Alternatives, provides an overview of the management areas and the three alternatives identified to manage park resources and visitor experiences.

## FORMULATION OF ALTERNATIVES

The management alternatives, including the preferred alternative, were developed with NPS staff based on the issues or concerns, desired future conditions, and visitor experiences articulated by the general public, NPS staff, subject matter specialists, park users, and neighboring landowners. The alternatives describe overall management concepts and the alternative ways in which the management prescriptions would be applied to the park.

### ALTERNATIVE A — NO-ACTION ALTERNATIVE

Management under this alternative would follow the 1977 *Master Plan* to manage and protect the park's cultural and natural resources. The current levels and types of recreational uses, including horseback riding, bicycling, running, and walking, would be allowed. The interpretive program would continue to offer both self-guided tours and park ranger-led programs that explain the Battle of Wilson's Creek and the Civil War in Missouri. Rehabilitation of the battlefield landscape would continue on a limited scale, as staffing and funding permit. Park maintenance would continue to undertake measures to control the spread of exotic and noxious plants and protect the threatened and endangered species found within the park boundaries.

Interpretive programs, including guided tours and demonstrations, would continue to



focus on tour groups, school groups, and visitors who make Wilson's Creek National Battlefield a destination stop. Improvements would be made to the interpretive program to enhance information provided to the visitors. Visitor services and interpretive programs would not be expanded to address recreational users. The park boundaries would not be adjusted under the no-action alternative.

### **ALTERNATIVE B — WILSON'S CREEK BATTLEFIELD COMMEMORATION (PREFERRED ALTERNATIVE)**

Management under this alternative would focus on efforts to honor the memory of the Battle of Wilson's Creek through an array of interpretive and educational experiences that inform visitors of the special nature of Wilson's Creek National Battlefield. The park interpretive programs would emphasize a reflective and contemplative visitor experience that captures the site's unique qualities and its status as hallowed ground dedicated to sacrifice for principles and the human and social costs of the Civil War. Park management would work with local schools, museums, and universities, as well as officials and agencies from the cities of Springfield, Battlefield, and Republic, and Greene and Christian Counties, in communicating to the public the meaning and significance of the park's history and resources.

Interpretation would be a major focus in the park. New interpretive displays would be designed to enhance the visitor's experience. Park ranger-led programs would occur along interpretive trails or at interpretive sites. Other experiences would be self-directed. Visitors using new park maps and brochures would follow the tour-road loop to important sites where interpretive signs would provide information about the events that occurred at those locations. Marked trails would guide

and inform visitors about the important resources at each site. New and existing trails in the park would be developed or realigned along the routes of historical trails and traces whenever possible in order to strengthen all visitors' connection to the historical scene. Planning for the interpretive program would emphasize aesthetically compatible media that are discrete and unobtrusive.

Preserving and retaining the historic character of the cultural landscape would be a priority; 718 acres, or 41 percent of the park, would be located in the Battlefield Landscape Enhancement zone, where visitors could envision the events of August 10, 1861. Data compiled in the draft cultural landscape report would enhance park management's effort to preserve the landscape's historic character. Recreational use would be allowed, but managed so as not to detract from the park mission, visitor experience, and efforts toward landscape rehabilitation. Horseback riding would be allowed only on designated trails as long as this use did not impact the experience for other visitors. Passive recreational activities such as hiking would be allowed in the interpretive focus area. Equestrian use would be allowed along the Wire Road, which is located in the interpretive focus area. Additional services, such as interpretive information and park ranger-led tours, would not be developed for recreational users.

Visitor access would be allowed in areas with sensitive resources such as archeological sites or threatened and endangered species habitat, either with guided tours or self-guided interpretive trails.

Park management would monitor levels of recreational use for potential impacts on resources or the visitor experience. When conflicts occurred, park management would limit recreational use wherever and to whatever degree necessary to ensure the visitors' ability to contemplate and appreciate of the park's history and significance.

Park management would cooperate with agencies and officials from the cities of Springfield, Battlefield, and Republic, and Greene and Christian Counties in their long-range regional planning efforts. These planning efforts would focus on both regional and park issues, seeking solutions to the impacts of increased suburban growth, transportation development, and visual intrusions along the park's boundaries. The landscape maintenance zone would include much of the park's perimeter within the boundary. Vegetation management in this area would help mitigate impacts resulting from visual and auditory intrusions.

Park staff would work to resolve conflicts that arose over management activities, visitor access, and proposed activities and developments on adjacent lands that could affect Wilson's Creek.

NPS managers would seek understanding and cooperation with landowners to encourage management of their lands in a manner compatible with park purposes. NPS staff would also seek ways to provide landowners with technical and management assistance to address issues of mutual interest. The NPS would work closely with local, state, and federal agencies whose programs affect or are affected by activities at Wilson's Creek National Battlefield.

## **ALTERNATIVE C — WILSON'S CREEK CIVIL WAR RESEARCH CENTER**

Alternative C would focus on a distinctive combination of Wilson's Creek National Battlefield's outstanding site integrity and vast archival collection to develop the park as a major research center focusing on the Civil War in Missouri, Arkansas, Kansas, and other areas west of the Mississippi River.

Historical and scientific research in support of resource preservation, rehabilitation, and interpretation of the park's history and significance would be the management focus for this alternative. Historical, archeological, genealogical, and biological research in park archives and at significant resource sites would be encouraged. These research activities would have the potential of providing additional information on the park's history and significance and thus enhancing the visitor experience. The park would work with universities and state agencies in developing strategies for managing its collection, outlining archival research guidelines, and establishing protocols for archeological investigations. These research programs would enhance interpretive efforts to inform and educate park visitors and develop educational outreach programs for the local communities. Internet technology would be used to facilitate research, interpretation, and outreach programs.

Park staff trained in archival management would assist professional and non-professional researchers in the research library and with park collections. School groups, tour groups, and other park visitors would be encouraged to visit significant cultural and natural resource areas and research sites whenever appropriate. These sites would be interpreted to explain methods of data recovery and how these



efforts ultimately would contribute to a better understanding of the battlefield.

Less than 10 percent of the park, 139 acres, would be included in the Battlefield Landscape Enhancement area. This is the smallest amount for this area under the three alternatives. Only selected primary sites of the battlefield landscape would be designated for treatments that would retain and preserve the battlefield's historic character. This reduced emphasis on landscape enhancement would enable park staff to focus efforts on interpretive and educational programs and on assisting researchers. Archeological, historical, and biological research potentially could provide additional data and guidance for future landscape enhancement. As research efforts provided more information about the battlefield landscape, park management may wish to consider negotiating cooperative agreements with neighboring landowners to maintain the integrity of the surrounding landscape that were critical to the battle.

Recreational uses, including horseback riding, bicycling, running, and walking, would be allowed and managed so as not to impede visitors who wished to focus on the history and significance of Wilson's Creek. Research involving highly significant resources, such as archeological sites or threatened and endangered species would occur in the resource preservation area. Recreational use in this area would be limited to hiking and walking.

A total of 726 acres, or 41 percent of the park, would be zoned for landscape maintenance. Park management would monitor levels of recreational use or research activities for potential impacts on resources or on visitors' ability to contemplate the significance and meaning of the battle. Where conflicts occur, park

management would limit recreational use to ensure the visitors' ability to contemplate and appreciate the park's significance.

Park management would cooperate with agencies and officials from the cities of Springfield, Battlefield, and Republic, and Greene and Christian Counties in their long-range regional planning efforts. These planning efforts would focus both on regional and park issues, seeking solutions to the impacts of increased suburban growth, transportation development, and visual intrusions on the park's boundaries. The landscape maintenance zone would include much of the park exterior. Vegetation management in this area would help mitigate impacts resulting from visual and auditory intrusions.

Park staff would work to resolve conflicts that arose over their activities, visitor access, and proposed activities and developments on adjacent lands that could affect the battlefield. NPS managers would seek understanding and cooperation with landowners to encourage management of their lands in a manner compatible with park purposes. NPS staff would also seek ways to provide landowners with technical and management assistance to address issues of mutual interest. The NPS would work closely with local, state, and federal agencies whose programs affect or are affected by activities at Wilson's Creek National Battlefield.

### **Boundary Assessment**

The Arizona Desert Act (PL 101-628 § 1216) directs the secretary of the interior to develop criteria to evaluate any proposed changes to the existing boundaries of individual park units. Those criteria are to include

- analysis of whether the existing boundary provides for the adequate protection

and preservation of the natural, historic, cultural, scenic, and recreational resources integral to the unit

- an evaluation of each parcel proposed for addition or deletion based on this analysis
- an assessment of the impact of potential boundary adjustments taking into consideration the factors listed above as well as the effect of the adjustments on the local communities and surrounding areas

Boundary adjustments may be recommended to

- protect significant resources and values, or to enhance opportunities for public enjoyment related to park purposes
- address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineations such as topographic or other natural features or roads
- otherwise protect park resources that are critical to fulfilling park purposes

As part of the general management planning process, the NPS has identified and evaluated boundary adjustments that may be necessary or desirable to carry out the purposes of the park.

All recommendations for boundary changes must meet the following two criteria:

- 1) The added lands will be feasible to administer, considering their size, configuration, ownership, the presence of hazardous substances or exotic species, costs, impacts on local communities, etc.
- 2) Other alternatives for management and resource protection are not adequate.

The NPS must identify and use, to the maximum extent possible, alternatives to the direct federal purchase of privately owned lands. The NPS can acquire only the minimum necessary to achieve management objectives, and it can cooperate with landowners, other federal agencies, tribal, state, and local governments, and the private sector to manage land for public use or protect it for resource conservation.

The authorized boundary of Wilson's Creek National Battlefield encompasses 1,750 acres, approximately 75 percent of the actual combat areas associated with the Battle of Wilson's Creek. Some lands significant to the battle lie outside the park boundary. For a full description of these lands and the ways in which they would be applied under the alternatives, please see the "Adequacy of Park Boundaries" and the "Boundary Adjustments and Land Protection" sections in chapter 1.

## **Environmental Consequences**

The National Environmental Policy Act (NEPA) requires environmental documents to disclose the environmental impacts of all reasonable alternatives and any adverse environmental effects that cannot be avoided should the preferred alternative be implemented. Table 4, Summary of Impacts, summarizes the impacts of the alternatives, including the no-action alternative, on cultural resources; visitor experience and aesthetic resources; natural resources; social and economic environment; and park access and transportation. Please see chapter 4, "Environmental Consequences," for a detailed analysis of the impacts of the management alternatives.

<b>AlteC – Continuach Center</b>	
Managementpoints continuation strian parking to current mana below:        sitor center for ifacts	
<ul style="list-style-type: none"> <li>▪ Tour-roadic traces and walkyestrian and</li> <li>▪ Recreatio picnickingunning, and horsebac</li> <li>▪ extent poerpretive walks</li> <li>▪ Primary e loop</li> <li>▪ Continueo touring and biking parkingaging on tour-road</li> <li>▪ Construc</li> </ul>	
<ul style="list-style-type: none"> <li>▪ researchestablished</li> <li>▪ Park rangarp farmstead and programanced</li> <li>▪ Trails opy Hill and other walking battlefield will be</li> <li>▪ No new tsults of more</li> <li>▪ Wire Roa</li> </ul>	
<ul style="list-style-type: none"> <li>▪ equestriaties (hiking)</li> <li>▪ No exparwith research trails        itor access to</li> <li>▪ Continue landscapraged in park</li> <li>▪ Missouri restored,loped in</li> <li>▪ Control vademic</li> </ul>	
	al resource interpreted as part  ades habitat
	e area available  designated



TABLE 1. MANAGEMENT PRESCRIPTIONS AND IDENTIFIED MANAGEMENT ALTERNATIVES

Alternative A – No Action Continuation of Existing Conditions	Alternatives/Management Prescriptions	Alternative B – Battlefield Commemoration	Alternative C – Civil War Research Center
<p>Management areas will not be applied in continuation of existing conditions. The current management actions are described below:</p> <ul style="list-style-type: none"> <li>Tour-road loop open for biking, running, and walking</li> <li>Recreational uses: hiking, walking, picnicking, jogging, bicycling, and horseback riding. Allowed to maximum extent possible.</li> <li>Primary equestrian staging on tour-road loop</li> <li>Continue use of overflow equestrian parking</li> <li>Construct addition to visitor center for research library and artifacts</li> <li>Park ranger-led interpretive walks and programs at Ray House and Bloody Hill</li> <li>Trails open for hiking, running, and walking</li> <li>No new trails</li> <li>Wire Road open for pedestrian and equestrian use</li> <li>No expansion of designated equestrian trails</li> <li>Continue rehabilitation of battlefield landscape as funds and staffing permit</li> <li>Missouri bladderpod glades habitat restored</li> <li>Control visitor access to sensitive sites</li> </ul>	<b>VISITOR SERVICES / ADMINISTRATION</b>	<ul style="list-style-type: none"> <li>Primary visitor contact points</li> <li>Equestrian parking moved to site near visitor center</li> <li>Construct addition to visitor center for library and artifacts</li> </ul>	<ul style="list-style-type: none"> <li>Primary visitor contact points</li> <li>Convert overflow equestrian parking to permanent site</li> <li>Construct addition to visitor center for research library and artifacts</li> </ul>
	<b>INTERPRETIVE FOCUS</b>	<ul style="list-style-type: none"> <li>Tour-Road Loop: managed to maintain park mission and visitor experience. May result in limiting types and levels of use</li> <li>Eliminate equestrian staging on tour-road loop</li> <li>New trails—follow historic traces</li> <li>Wire Road open for pedestrian and equestrian use</li> <li>Add park ranger-led interpretive walks and special events</li> </ul>	<ul style="list-style-type: none"> <li>New trails—follow historic traces</li> <li>Wire Road open for pedestrian and equestrian use</li> <li>Trails open for hiking, running, and walking</li> <li>Add park ranger-led interpretive walks and special events</li> <li>Tour road open for auto touring and biking</li> <li>Eliminate equestrian staging on tour-road loop</li> </ul>
	<b>BATTLEFIELD LANDSCAPE ENHANCEMENT</b>	<ul style="list-style-type: none"> <li>Retain and enhance the general appearance of the battlefield landscape</li> </ul>	<ul style="list-style-type: none"> <li>Rehabilitation priority established</li> <li>Historic character of Sharp farmstead and fields retained and enhanced</li> <li>Enhancement of Bloody Hill and other significant areas of the battlefield will be deferred pending the results of more extensive research</li> </ul>
	<b>RESOURCE PRESERVATION</b>	<ul style="list-style-type: none"> <li>Limited visitor access and recreation activities (hiking) accommodated within context of park purpose. Where conflicts occur, decisions favor resource protection</li> <li>Missouri bladderpod glades habitat restored</li> <li>Sensitive cultural resource sites protected</li> </ul>	<ul style="list-style-type: none"> <li>Limited recreation activities (hiking) permitted if compatible with research activities. Controlled visitor access to sensitive sites</li> <li>Research efforts encouraged in park archives and library</li> <li>Research protocol developed in cooperation with local academic community</li> <li>Archeological and natural resource research efforts will be interpreted as part of the visitor experience</li> <li>Missouri bladderpod glades habitat restored</li> </ul>
	<b>LANDSCAPE MAINTENANCE</b>	<ul style="list-style-type: none"> <li>Manage invasive species</li> <li>Screen visual and auditory intrusions</li> <li>Limited potential for expansion of designated equestrian trails</li> </ul>	<ul style="list-style-type: none"> <li>Landscape maintenance area available for equestrian use</li> <li>Potential expansion of designated equestrian trails</li> </ul>

## CONTENTS

### **Purpose of and Need for the General Management Plan 1**

Introduction 3

Issues 4

Impact Topics 4

Impact Topics Dismissed from Further Consideration 7

Planning Context, Variables, and Constraints 7

Carrying Capacity 8

Adequacy of Park Boundaries 8

Land Protection 13

Transportation Planning 14

Park History and Use Relative to Management Planning 14

Purpose, Significance, and Mission Goals of Wilson's Creek National Battlefield 15

Historical Overview 15

Special Mandates and Administrative Commitments 18

Servicewide Mandates and Policies 18

Relations with Private and Public Organizations, Adjacent Landowners, and Governmental Agencies 19

Cultural Resources 19

Collections 19

Natural Resources 20

Visitor Use and Experience 21

Visitor Information, Orientation, Interpretation, and Environmental Education 21

Public Health and Safety 22

Cooperative Planning 22

Sustainable Practices 23

Visitor Center Addition 23

Decision Points 24

### **Alternatives, Including the Preferred Alternative 25**

Introduction 27

Management Prescriptions 27

Development and Administration Area 27

Interpretive Focus Area 28

Battlefield Landscape Enhancement Area 28

Resource Preservation Area 29

Landscape Maintenance Area 30

Formulation of Alternatives 30

Alternative A — No Action 30

Alternative B — Wilson's Creek Battlefield Commemoration (Preferred Alternative) 32

Alternative C — Wilson's Creek Civil War Research Center 36

Alternatives Considered but Rejected 40

Boundary Adjustments and Land Protection	40
Application of Potential Boundary Adjustments	40
Comparison of Environmental Consequences	41
Actions Common to All Alternatives	41
Environmentally Preferable Alternative	42

## **Affected Environment 45**

Introduction	47
Cultural Resources	47
Historical Sites and Structures	47
Archeological Resources	47
Cultural Landscape	47
Archival/Museum Collections	49
Visitor Experience and Aesthetic Resources	49
Visitor Use	49
Visitor Experience and Interpretation	49
Visual and Scenic Resources	52
Natural Resources	52
Soil	52
Water Quality	52
Vegetation	53
Wildlife	54
Special Status Species	54
Social and Economic Environment	54
Recreation and Leisure	55
Park Access and Transportation	56

## **Environmental Consequences 57**

Introduction	59
Methodology	59
Intensity	59
Duration	61
Cumulative Impacts	61
Potential for Impairment of Park Resources and Values	62
Mitigation	62
Alternative Impacts	64
Alternative A — No Action	64
Alternative B — Wilson's Creek National Battlefield Commemoration (Preferred Alternative)	74
Alternative C — Wilson's Creek Civil War Research Center	84
Unavoidable Adverse Impacts	94
Irretrievable and Irreversible Commitments of Resources	94
Relationship Between the Short-Term Use of the Environment and Long-Term Productivity	95



## **Consultation and Coordination 97**

### **Consultations 99**

#### **Agencies and Organizations Receiving the Draft GMP/EIS 99**

##### **Federal Agencies and Officials 99**

##### **State Agencies and Officials 100**

##### **Local and Regional Agencies, Organizations, and Officials 100**

## **Appendixes/Bibliography/Preparers and Consultants 103**

### **Appendixes 105**

### **Bibliography 117**

### **Preparers and Consultants 119**

### **Index 120**

## **TABLES**

### **Table 1. Management Prescriptions and Identified Management Alternatives xi**

### **Table 2. Alternative B Management Areas and Sites 34**

### **Table 3. Alternative C Management Areas and Sites 38**

### **Table 4. Summary of Impacts 43**

## **MAPS**

### **Region Around Wilson's Creek Battlefield 5**

#### **Existing Conditions 6**

#### **Boundary Assessments 10**

#### **Alternative A – No Action 31**

#### **Alternative B – Wilson's Creek Battlefield Commemoration (Preferred Alternative) 35**

#### **Alternative C – Wilson's Creek Civil War Research Center 39**

#### **Historic and Existing Trails 50**



**Purpose  
of  
and Need  
for the  
General  
Management  
Plan**





## PURPOSE OF AND NEED FOR THE GENERAL MANAGEMENT PLAN

### INTRODUCTION

The general management plan (management plan) is the primary planning document of the National Park Service (NPS). The management planning process performs two critical functions for NPS managers. First, by describing specific desirable resource conditions and visitor experiences in national parks, it establishes a clear direction for resource preservation and visitor use, and it assesses alternate management strategies for achieving these goals.

These goals are based on the NPS's purpose, significance, special mandates, administrative commitments, the body of laws and policies that guide management of the national park system, and the issues and concerns expressed by NPS staff, park visitors, neighbors, and the general public. The management plan provides a framework to guide park management decision making for the next 15 to 20 years. NPS management plans are developed in consultation with the general public and interested organizations, including federal, state, and local agencies.

Wilson's Creek National Battlefield is located about five miles southwest of the city of Springfield, Missouri, on the boundary between Greene and Christian Counties in the southwestern corner of the state (See map of region). Wilson's Creek National Battlefield encompasses 1,750 acres, which includes 75 percent of the actual battlefield. A map of the park is shown in Existing Conditions. Please see the "Adequacy of Park Boundaries" section for a further discussion of this topic.

Wilson's Creek National Battlefield does not have a general management plan. The park has been operating under the 1977 *Master Plan*. Since completion of the plan, the park has changed significantly. The visitor center

and the tour-road loop both were constructed as recommended in the *Master Plan*. The surrounding region has evolved as well. The city of Springfield and Greene and Christian Counties have grown dramatically. Regional population growth has increased the potential for additional visitors and impacts on the cultural and natural resources of the park. Issues requiring management action have been identified in consultation with NPS staff, local agencies, park partners, and the general public. These issues include:

- reconciling increasing levels of recreational use with the park's core mission to commemorate the battle
- minimizing the effects of encroaching suburban development on the park's boundaries, including visual and auditory intrusions
- continuing efforts to enhance the historic appearance of the battlefield landscape
- refining cultural and natural resource management strategies
- maintaining the integrity of the visitor experience
- planning cooperatively with neighboring city and county governments

Both NPS staff and the general public expressed their desires for the park's future condition, which largely dovetailed with the issues stated above, and include

- preserving and retaining the historic appearance of the battlefield landscape
- coordinating cultural and natural resource management strategies at Bloody Hill
- forging partnerships with neighboring landowners
- coordinating park planning with the planning efforts of local agencies

- identifying recreational alternatives to Wilson's Creek National Battlefield
- ensuring that all visitors understand and appreciate the significance of Wilson's Creek National Battlefield

## **ISSUES**

The management plan for Wilson's Creek National Battlefield outlines alternate management strategies to achieve appropriate resource conditions and visitor experiences at the park. The plan would also establish a decision-making process that would enable NPS staff to address future issues and solve problems, as well as provide the direction and guidance for achieving the park's desired future conditions.

### **Impact Topics**

Four categories of impact topics (resources and values at stake) were identified in the planning process: cultural resources, visitor experience, natural resources, and social and economic environment. These categories and their impact topics are briefly presented below.

#### **Cultural Resources**

Wilson's Creek National Battlefield is a nationally significant site. The Battle of Wilson's Creek was the second major battle of the Civil War and the first fought west of the Mississippi River. The park contains 50 known archeological sites and 27 historic structures. Impact topics considered include archeology, historic structures, cultural landscape, and collections. A 100% archeological survey and a cultural landscape report would likely identify new archeological sites, historic structures, and landscape components.

#### **Visitor Experience and Aesthetic Resources**

Increasing residential development adjacent to the park poses potential impacts to the park's neighboring view sheds. As visitation increases, there would be greater potential for conflicts between recreational users and visitors who wish to experience the park's historical significance. Impact topics considered include visitor use, visitor experience and interpretation, and visual and scenic resources.

#### **Natural Resources**

Some limited construction activities are proposed under both action alternatives. This construction could affect soils and vegetation. Management of exotic plant species and rehabilitation of the battlefield landscape would continue as priorities for park management. The creation of management zones would influence the impact of these activities on the park's landscape. The park also includes habitat for an endangered plant species, the Missouri bladderpod (*Lesquerella filiformis*), and an endangered animal species, the gray bat (*Myotis grisescens*). Significant portions of the park are overgrown by exotic plant species, such as Osage orange, multi-flora rose, musk thistle, and three species of brome. Impact topics considered include soils, water quality, vegetation, wildlife, and special status species.

#### **Social and Economic Environment**

As the cities of Springfield, Battlefield, and Republic continue to grow, Wilson's Creek National Battlefield would serve as a recreational resource for more residents. The





NORTH

Map not to scale

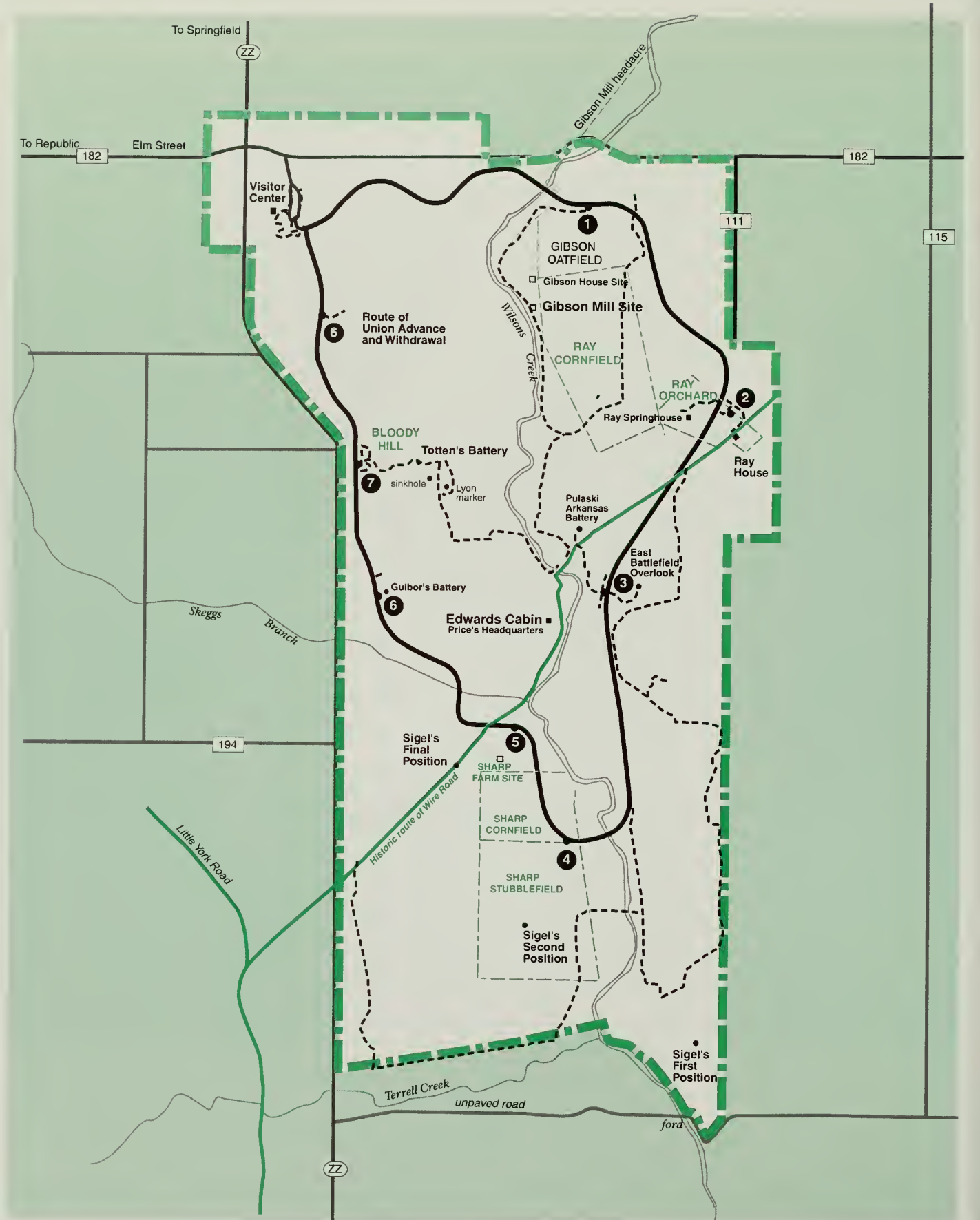
## Region

General Management Plan

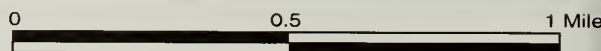
Wilson's Creek National Battlefield

United States Department of the Interior • National Park Service

DSC • 410 • 20014 • OCT 2001



- Wire Road
- Tour Road
- Park Trails
- - - Park Boundary
- Historic fence line
- Tour stop



## Existing Conditions

General Management Plan  
Wilson's Creek National Battlefield  
United States Department of the Interior • National Park Service

only impact topic considered under this heading is recreation and leisure.

### **Park Access and Transportation**

All of the evaluated alternatives could potentially impact visitor access and circulation within the park. In addition, transportation initiatives of state and local agencies, such as the US Highway 60 Bypass, the connection of the James River Freeway to I-44, and widening of County Highways M and MM, could have an impact on visitor ability to access the park.

### **Land Use**

Adjustments of the park's boundaries as discussed in the park boundary assessment could change the types and levels of use on several hundred acres of land in Greene and Christian Counties.

### **Revenue Base – Local General Government**

Adjustments of the park's boundaries to incorporate significant battle-related lands could remove several hundred acres of land from the tax rolls of Greene and Christian Counties.

### **Impact Topics Dismissed from Further Consideration**

Impact topics dismissed from further consideration include air quality, geological hazards, minerals, flood plains, prime and unique farmlands, and effects on minority or low-income populations or communities.

None of the evaluated alternatives propose activities that would affect air quality. Dust from soil exposure and disturbance during construction would be localized and mitigated through the use of water and other dust-control measures.

The park's gentle topography presents no geological hazards nor are there any mineral resources present in the park. All the actions described in the plan would involve surface disturbance only and pose no impacts at the subsurface level (per consultation with Mark Matheny, NPS/DSC geotechnical specialist, 2/8/01).

None of the evaluated alternatives would affect flood plains or wetlands at the park. Park wetland areas are zoned in the resource preservation area, which affords them the highest level of protection.

The park is located in the uplands of the Ozark Plateau. The soils and farmlands of this region do not qualify as prime or unique. Prime or unique farmlands are defined as soils particularly suited for growing general or specialty crops. Prime farmland produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts.

The Environmental Justice Policy (Executive Order 12898) requires federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. None of the actions proposed under the alternatives would result in identifiable adverse human health effects. Therefore, there would be no direct or indirect negative or adverse effects on any minority or low-income population or community.

### **PLANNING CONTEXT, VARIABLES, AND CONSTRAINTS**

These planning issues relate to the park's carrying capacity and the adequacy of its



boundaries. They are common to all alternatives.

### **Carrying Capacity**

The visitor use data have recently been compiled for Wilson's Creek National Battlefield. None of the data compiled in 1999 visitor surveys indicated evidence of adverse impacts on resources resulting from visitor activities, nor was there an indication that visitor conflicts were occurring as a result of increasing visitor numbers and types of uses. Based on these results it was determined that the park is currently below its carrying capacity.

The general management plan will address visitor carrying capacity by describing desired visitor experiences, resource conditions, and appropriate support facilities through the management prescriptions for the park. Wilson's Creek NB staff will monitor resource and visitor experience conditions over time. If trends are identified that signal changes from desired resource and visitor experience conditions, detailed visitor management planning will be initiated.

### **Adequacy of Park Boundaries**

The Arizona Desert Act (PL101-628 § 1216) directs the secretary of the interior to develop criteria to evaluate any proposed changes to the existing boundaries of individual park units. Those criteria are to include

- analysis of whether the existing boundary provides for the adequate protection and preservation of the natural, historic, cultural, scenic, and recreational resources integral to the unit
- an evaluation of each parcel proposed for addition or deletion based on this analysis

- an assessment of the impact of potential boundary adjustments taking into consideration the factors listed above as well as the effect of the adjustments on the local communities and surrounding areas

Boundary adjustments may be recommended to

- protect significant resources and values, or to enhance opportunities for public enjoyment related to park purposes
- address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineations such as topographic or other natural features or roads
- otherwise protect park resources that are critical to fulfilling park purposes

Section 1217 of the law provides that in proposing any boundary change after the date of enactment (November 28, 1990), the Secretary shall:

- consult with affected agencies of state and local governments, surrounding communities, affected landowners, and private national, regional, and local organizations
- apply the criteria developed pursuant to Section 1216 and accompany the proposal with a statement reflecting the results of the application of such criteria
- include an estimate of the cost of acquisition of any parcels proposed for acquisition together with the basis for the estimate and a statement on the relative priority for the acquisition of each parcel within the priorities for other lands in the unit and the national park system



As part of the general management planning process, the NPS has identified and evaluated boundary adjustments that may be necessary or desirable to carry out the park's purposes.

As stated in NPS *Management Policies* regarding boundary adjustments, all recommendations for boundary changes must meet the following two criteria:

The added lands will be feasible to administer, considering their size, configuration, ownership, the presence of hazardous substances or exotic species, costs, impacts on local communities, etc.

Other alternatives for management and resource protection are not adequate.

The NPS must identify and use, to the maximum extent possible, alternatives to the direct federal purchase of privately owned lands. The NPS can acquire only the minimum necessary to achieve management objectives, and it can cooperate with landowners, other federal agencies, tribal, state, and local governments, and the private sector to manage land for public use or protect it for resource conservation.

The authorized boundary of Wilson's Creek National Battlefield encompasses 1,750 acres, approximately 75 percent of the actual combat areas associated with the Battle of Wilson's Creek. Some lands significant to the battle lie outside the park boundary. These lands include the following.

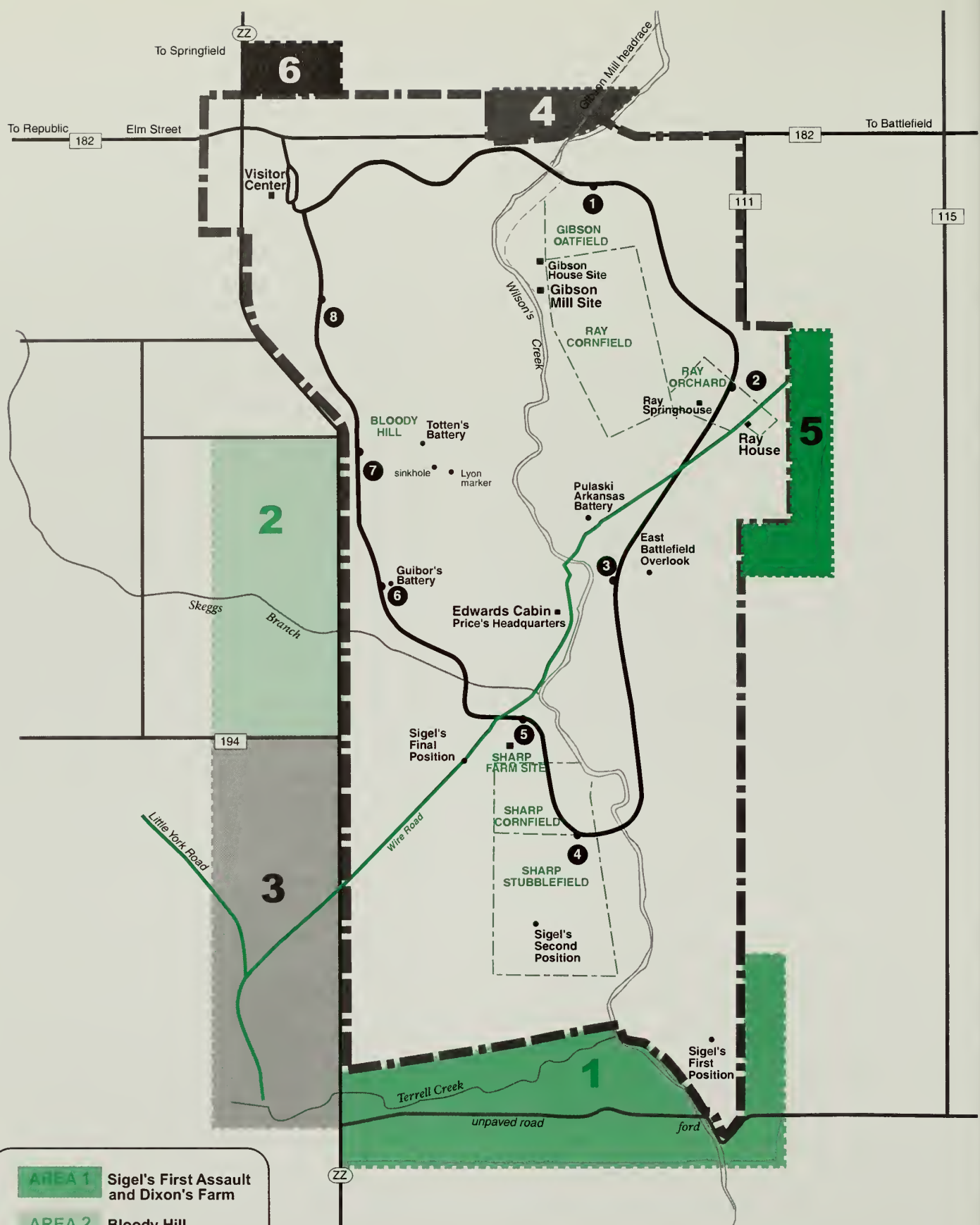
### **The Area South and East of the Park Boundary (Area 1)**

This approximately 160-acre area encompasses the hilltop where Colonel Franz Sigel began his bombardment of the Confederate encampment, a portion of the historic Dixon farm, and his forces' route of approach to the Sharp stubble field.

After dividing his army into two wings in Springfield, Brigadier General Nathaniel Lyon approached the valley of Wilson's Creek on the night of August 9, intent on launching a two-prong, surprise attack on the combined Confederate/Secessionist forces encamped along the creek. He ordered Colonel Sigel to march south out of town with one wing of the army and launch an attack on the flank and rear of the enemy forces. Sigel conducted a textbook advance south and then west into position near the enemy encampment. By 5:30 a.m. on August 10, Sigel had posted a battery of artillery on a ridge above Wilson's Creek and Telegraph Road overlooking the Confederate camp. The ensuing artillery bombardment threw the rear elements of the Confederate force into disarray.

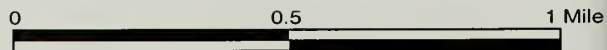
After this attack, Sigel moved around the rear of the enemy force across Wilson's Creek and the Dixon farm. His troops then turned north for his second attack in the stubble field of the Sharp farm. Sigel's bombardment of the Confederate cavalry in Sharp's stubble field constituted one of the most effective offensive uses of artillery during the Civil War. Sigel's skillful advance nearly carried the day for Lyon's reckless decision to divide his forces in the face of a larger enemy force. Despite his early success, however, Sigel's failures later that morning negated his early achievements. His attack ultimately ended in the defeat and rout of his forces.

The addition of these lands would enable the park to provide visitors a more complete and detailed interpretation of Sigel's advance, which constituted half of the Union activity during the battle. The addition of the Dixon farm would enhance interpretation of the impact of the battle on civilians who lived in the valley. Archeological excavations at the site of Sigel's first artillery position could be particularly valuable.



- AREA 1** Sigel's First Assault and Dixon's Farm
- AREA 2** Bloody Hill and Skeggs Branch
- AREA 3** Wire Road and Little York Road
- AREA 4** Lyon's Approach
- AREA 5** Confederate Rallying Point
- AREA 6** General Sweeney Civil War Museum

- Wire Road
- Tour Road
- Park Trails
- Park Boundary
- Historic fence line
- Tour stop



## Boundary Assessments

General Management Plan  
Wilson's Creek National Battlefield  
United States Department of the Interior • National Park Service  
DSC • 410 • 20018 • March 2002

### **The Area Extending Due West of the Park (Area 2)**

This approximately 150-acre area encompasses the ridge that became known in the aftermath of the battle as Bloody Hill.

While Sigel progressed on his flanking movement, General Nathaniel Lyon advanced southward to attack the main Confederate/Secessionist force. Early on the morning of August 10, his infantry columns appeared on the crest of Bloody Hill. The first Union attacks drove back the Confederate forces, which then regrouped for a series of assaults on the Union forces on the hill. The Confederates made several efforts to flank the Federal force on the ridge, forcing Lyon to extend his lines further west. After fierce fighting in numerous infantry attacks, the superior numbers of Confederate/Secessionist forces finally began to wear down the stubborn Union resistance. Lyon fell, mortally wounded. Confederate cavalry screened by the low ground along Skegg's Branch finally managed to get on the flank of the Union line. With their position jeopardized, their commanding general dead, and ammunition nearly exhausted, the outnumbered Federal troops commenced an orderly withdrawal back to Springfield.

These lands are critical portions of the battle-related landscape. Bloody Hill was the core combat area of the Battle of Wilson's Creek. Casualty rates here, particularly among Union forces, proportionately were among the highest seen during the entire war. Interpretation of this area would enhance the visitors' ability to understand the evolution of the battle and the role that the landscape played in determining the outcome.

### **The Area Adjacent to the Southwest Boundary of the Park (Area 3)**

This approximately 200-acre area includes the Guinn Farm, Moody's Spring, and the intersection of Telegraph and York Roads.

The Telegraph and Little York Roads were important components of the network of roads that served southwestern Missouri and made Springfield the region's economic hub. In the absence of rail transport, Telegraph (or Wire) Road was particularly critical as transportation and communication linking southwestern Missouri with St. Louis to the north and Arkansas and Fort Smith on the south. Telegraph Road also connected southwestern Missouri with the terminus of the railroad at Rolla, Missouri. Tens of thousands of Union and Confederate troops marched the Wire Road during the war. Both roads were utilized by Colonel Sigel's troops in their retreat from Wilson's Creek. The Little York Road provided a return route to Springfield for Sigel's men.

The Guinn farm also was the site of a skirmish between a portion of Sigel's retreating forces commanded by Captain Eugene Carr and troops of the Missouri State Guard. The Union forces fled in panic and abandoned an artillery piece near the Guinn farm.

Telegraph Road also played a role in the later battles of Pea Ridge and Prairie Grove in Arkansas, and the Battle of Springfield. As the region's primary transportation artery, Telegraph Road was a significant determining factor in the military campaigns of southwestern Missouri and northwestern Arkansas.

Preservation and interpretation of this area would enhance visitor understanding of the role that transportation played in the events that led to the Battle of Wilson's Creek and



made southwestern Missouri and northwest Arkansas a battleground in the opening months of the Civil War. Interpretation of the Guinn farm site would enhance visitor understanding of the battle's impact on civilians.

**The Area Adjacent to the Park's Northern and Eastern Boundary, Where County Road 182 Enters the Park (Area 4)**

This approximately 25-acre site encompasses the approach of the Union forces under General Nathaniel Lyon. The first shots of the battle were fired here when Lyon's advance troops clashed with Southern foragers. Lyon's subsequent movements were cautious and time-consuming; by the time his forces reached the Short farm, they found troops of the Missouri State Guard deployed on the northern spur of Bloody Hill. Lyon's delay largely negated the advantage he had gained with his gamble to split his forces and march his troops cross-country in order to attack from an unexpected direction.

Visitor access to this area would enhance the park's efforts to interpret for visitors the initial phases of the battle. Trails following the traces of Lyon's route would enable visitors to encounter the battlefield as the main Union force did on the morning of August 10, 1861. This would permit visitors to gain a deeper appreciation of the general's strategy and how the landscape shaped the course of the battle.

**The Area East and Southeast of the Ray House (Area 5)**

This 60-acre area includes the rallying point for Louisiana and Arkansas forces that had retreated from the Ray cornfield after nearly overwhelming advancing Union infantry in the opening stages of the battle. Union artillery batteries fired on the Confederate

troops in support of outnumbered Union forces that were withdrawing after a fierce fight at the Ray farm. The heavy gunfire drove a portion of the Third Louisiana Volunteer Infantry under Major William F. Tunnard to seek refuge in an open field behind the Ray house, which Southern medical personnel had requisitioned for use as a hospital. Union gunners of Du Bois' battery pounded these Confederate forces, dropping shells near the Ray house before physicians raised the yellow flag that designated a medical facility. Continued heavy fire forced Tunnard to move his troops behind the slope of a nearby hill. The area also includes a portion of the historic Wire Road, a transportation artery critical to the Battle of Wilson's Creek.

Visitor access to this area would enhance visitor understanding of the dynamics of the battle as it evolved in the early morning hours of August 10. Visitor access to this area would also improve visitor appreciation of the overall scope of the Battle of Wilson's Creek. Adjustment of the park boundary in this area would also correspond to logical topographical and natural features, such as the hillside behind which Tunnard's troops took shelter, as well as Wire Road. Finally, acquisition or use of this area could enhance visitor access to the park.

**The Area Adjacent to the Northwest Boundary of the Park (Area 6)**

This 20-acre parcel includes General Sweeney's Museum of Civil War History, a garage, and a house. The Sweeney museum is a private museum that houses one of the best privately owned Civil War collections in the United States. The collection includes 15,000-18,000 museum objects and numerous archives related to the Battle of Wilson's Creek and the Civil War in the Trans-Mississippi West. Existing improvements to the property include an 8,000-square-foot



house, a 3,000-square-foot museum facility, a garage and asphalt driveway, and a small parking lot. The collection is housed in an exhibit area in the museum and in a storage area in the basement of the museum. The Sweeney museum facility may meet current National Park Service museum and security standards.

Area 6 is adjacent to the park but not on land where the Battle of Wilson's Creek occurred. However, the museum and collection play a critical role in fulfilling the park's purpose to commemorate the Battle of Wilson's Creek. The interpretive links between the park and the Sweeney museum greatly enhance the historic context for park visitors. The park and the Sweeney Museum currently engage in cooperative activities, including historical research, the use of objects for interpretive displays, school group tours, and special event tours. If the collection and museum exhibit space were unavailable to the public, the park would lose access to important historic artifacts directly related to the Battle of Wilson's Creek and the Civil War in the Trans-Mississippi Theater of operations.

Acquisition of the collection and museum would enhance the park's ability to fulfill its mission to preserve and commemorate the Battle of Wilson's Creek. Acquisition of the property would extend the park boundary to the ridgeline north of the park, thus providing additional preservation for the Wilson's Creek battlefield viewshed. An inventory and assessment of the Sweeney museum collection's national significance by a professional archivist must be made before the final decision to acquire the entire collection. The National Park Service has clear authority to accept (by donation, loan, or purchase) only those objects and records which relate to the park's scope of collections statement.

## Land Protection

The NPS may employ a variety of different methods, as appropriate, for protecting park resources. These methods will be considered in a more detailed land protection planning process. These various methods include:

- acquisition of fee simple real property interest, possibly with arrangements for some rights to be reserved
- acquisition of less-than-fee real property interests, such as easements or rights of way
- cooperative approaches, such as cooperative agreements, participation in regional consortiums, local planning and zoning processes, or other measures that do not involve federal acquisition of any interest in real property

Wilson's Creek National Battlefield would first pursue alternatives that would avoid acquiring fee simple lands. The park primarily would work through federal and local planning processes to establish cooperative agreements with neighbors who have ownership of these significant properties. Through cooperative agreements, the NPS could provide technical assistance to neighbors interested in protecting the significant resources on their property. The NPS and Wilson's Creek NB would only consider acquisition of a fee simple real property interest if a willing seller were available.

Adjustments to the park boundaries under the general management plan would vary between the no-action and action alternatives. See the "Boundary Adjustments and Land Protection," section for the ways in which the boundary adjustments would be applied under the alternatives.

## Transportation Planning

In conjunction with the General Management Plan, a transportation study is being prepared for Wilson's Creek National Battlefield. This study has evaluated the park's transportation issues as they relate to park access, health and safety, visitor use, and visitor experience and interpretation. The study finds that transportation or transportation-related issues currently do not adversely affect park resources, the safety of park visitors, or their ability to enjoy the park. As the region continues to grow and park visitation increases, however, transportation issues may adversely affect park access, visitor safety, park resources, and visitor experience. The study identifies specific areas of concern and proposes recommendations that could be implemented by park management in the future. These areas of concern are as follows.

- Provide consistent, identifiable, directional, and informational signage along major access routes to the battlefield.
- Evaluate the desirability of maintaining the present mix of vehicle, bicycle, and pedestrian use of the tour-road loop, particularly recreational use unrelated to the park's purpose and significance.
- Coordinate greenway trails and off-street bicycle facilities to increase safety and encourage pedestrian and bicycle access to the park.
- Work cooperatively with local and state agencies to develop preservation and design guidelines as outlined in area growth management, land use, and transportation plans to minimize external visual and auditory impacts on key sites of the battlefield.

Under all alternatives, park management would have the option of implementing any or all of the recommendations of the

transportation study as need arises. Some of the recommendations relating to equestrian parking and vegetative screening to mitigate visual and auditory impacts are addressed in the General Management Plan's management alternatives.

## PARK HISTORY AND USE RELATIVE TO MANAGEMENT PLANNING

Wilson's Creek National Battlefield was established on April 22, 1960. In order to provide for development and maintenance of the park, the enabling legislation directed the secretary of the interior to "construct and maintain therein such roads, trails, markers, buildings, and other improvements, and such facilities for the care and accommodation of visitors as he may deem necessary."

The 1977 *Master Plan* outlined a process for achieving the goals outlined in the legislation. The plan called for the rehabilitation of the landscape "to a condition representative of the battle period." It also recommended the development of facilities, features, and interpretive systems to "enable the visitor to learn the details of the battle, its social and political implications and the impact of the action on the Civil War." Specific proposals included the following:

- closure of portions of county roads in the park
- restoration of the Ray House
- archeological investigations to determine the location of the Sharp farmhouse and outbuildings
- restoration of a portion of Telegraph (Wire) Road
- construction of a visitor center
- designation of an environmental study area
- development of a circulation system, including the tour-road loop and a network of foot trails

Most of these initiatives, including closure of the county road portions, restoration of the Ray House and Telegraph Road, construction of a visitor center, and development of a circulation system, have been completed. The environmental study area was designated but is currently not active. The archeological investigation at the Sharp farm is largely complete. A long-range interpretive plan was drafted in 1996 but has not yet been completed.

## **PURPOSE, SIGNIFICANCE, AND MISSION GOALS OF WILSON'S CREEK NATIONAL BATTLEFIELD**

During the first working sessions for the general management plan, NPS planners refined the purpose and significance statements for the park. Based on a review of the park's enabling legislation (which included an extensive review of the legislative history) and the professional expertise of NPS staff, NPS historians, and other subject-matter experts, the purpose and significance is as follows:

### **Purpose**

- The purpose of Wilson's Creek National Battlefield is to commemorate the Battle of Wilson's Creek and to preserve the associated battlefield.

### **Significance**

- Wilson's Creek National Battlefield is significant as the site of the second battle of the Civil War and the first major battle west of the Mississippi River.
- Wilson's Creek is the site of the death of General Nathaniel Lyon, the first Union general killed in the Civil War. Lyon's death focused national

attention on the potential loss of Missouri to the Confederacy.

- Wilson's Creek's rural character evokes the setting experienced by the combatants.

## **Mission Goals**

The park's mission goals were developed as part of the park's strategic plan.

- Wilson's Creek's natural and cultural resources and associated values are protected, restored, and maintained in good condition and managed within their broader ecosystems and cultural contexts.
- Visitors safely enjoy and are satisfied with the availability, diversity, and quality of park facilities, services, and appropriate recreational opportunities. Visitors and the general public understand and appreciate efforts to preserve the park and its resources.
- Natural and cultural resources are conserved through formal partnership programs.
- To better preserve park resources and to better provide for public enjoyment and visitor experience of the park, Wilson's Creek National Battlefield uses current management practices, systems, and technologies to accomplish its mission.

## **HISTORICAL OVERVIEW**

Union forces led in a lightening-like campaign by Brigadier General Nathaniel Lyon had routed pro-secessionist Governor Claiborne Jackson and Major General Sterling Price's Missouri State Guard out of Jefferson City and the Missouri River valley, sending them fleeing into the southwest corner of the state. Lyon, learning that General Price and his State Guard were about to be reinforced



by Brigadier General Ben McCulloch and his Confederates from Arkansas, again took the field. Advancing from Springfield down Telegraph Road, Lyon's column engaged Price's vanguard at Dug Springs on August 2, 1861. Satisfied that McCulloch had reinforced Price and that his (Lyon's) army was outnumbered, Lyon retired up Telegraph Road. The Southerners followed the Federals as far as the Wilson's Creek ford, where on August 6 they went into bivouac. There were several factors that dictated the selection of the camp: its proximity to Springfield, the availability of forage for the thousands of horses and mules, and the sufficient amount of streams and springs with good drinking water.

By late afternoon of August 9, 1861, General McCulloch was ready to resume the advance. The pickets were called in. As the columns were getting ready to move out, it began to rain and the movement was postponed until the next morning. Meanwhile, General Lyon, although he knew he was outnumbered almost two to one, took the offensive. Surprise, he reasoned, would be on his side, and even if he failed to defeat the Confederates, they would be so taken back by his audacity that they would not attempt a vigorous pursuit. His army could then withdraw to the railhead at Rolla without being harassed by swarms of Confederate horsemen.

When Lyon put his small army in motion on the evening of August 9, it marched in two columns. General Lyon with the main force, about 4,200 strong, left Springfield by way of the Little York Road, and Col. Franz Sigel's 1,200-man brigade marched along the Yokermill Road and the Old Delaware Trace. Lyon's battle plan called for the columns to converge from opposite directions on the Confederate camps shortly after daybreak.

On the morning of August 10, the Southern officers held early reveille. Many of the men gathered around campfires to prepare breakfast and discuss what the day might bring. Speculation became academic when Lyon's skirmishers, sweeping down the west bank of Wilson's Creek, encountered and drove in Confederate forces near the Short House. Supported by hastily deployed battle lines and the fire of Captain James Totten's cannons, the Federals swept across the ridge south of the Short House, drove James Cawthorn's brigade of Missourians from its camp, and advanced up the north slope of Bloody Hill. General Lyon further fragmented his army. Captain Joseph B. Plummer with his battalion of regulars had crossed to the east side of Wilson's Creek near Gibson's Mill and advanced into Ray's cornfield. Plummer had a twofold mission: protecting the flank of the battle lines advancing southward across Bloody Hill and assailing the battery (the Pulaski Artillery) that had unlimbered its four cannons on the knoll near the Guinn House.

The rattle of musketry, the roar of artillery, and the sight of frightened cavalymen from the Eighth Division of the Missouri State Guard who were routed from their camps by Lyon's surge convinced Generals McCulloch and Price that they had moved too slowly. Lyon had seized the initiative and had surprised and endangered their army. Staff officers were sent galloping to the camps with orders countermanding those for the march on Springfield. General Price with the infantry units of his Missouri State Guard advanced and engaged General Lyon's battle lines on Bloody Hill. Col. James McIntosh with two regiments marched north to intercept Plummer's regulars.

Colonel Sigel's brigade now entered the fight. The recall of Confederate pickets enabled Sigel's column to gain, unobserved, the ridge east of the confluence of Terrell and Wilson's



Creeks. Cannon were unlimbered and opened fire on the fields west of Wilson's Creek. Surprised, the Confederate horse soldiers panicked.

Sigel recalled his artillery and advanced north, fording Wilson's and Terrell Creeks. Valuable time was lost when some of his soldiers stopped to plunder the camps abandoned by the Confederate cavalry. It was about 8:30 a.m. before Sigel's brigade took position across the Telegraph Road at the Sharp House. Half a mile to the north on the southern slopes of Bloody Hill, General Price and his Missouri State Guard were locked in a deadly struggle with Lyon's battle lines. If Lyon prevailed, all Sigel had to do was to hold his chosen ground to ensure destruction of the Southern Army.

But in battle one must be ready for the unexpected. About one hour before Sigel's column reached the Sharp House, McIntosh and his two regiments had engaged Plummer's regulars in Ray's cornfield. The Confederates drove the regulars from the field and they recrossed Wilson's Creek. Advised of the rapid advance of Sigel's column and the threat to General Price's rear, General McCulloch recalled the 3<sup>rd</sup> Louisiana Infantry, one of the units that had defeated Plummer, and crossed Wilson's Creek. As the Louisiana troops marched to the point of danger, they were reinforced by a detachment of Missourians. Sigel's troops watched as the column forded Skeggs Branch and climbed the hill toward them. Many believed the oncoming soldiers to be the 1<sup>st</sup> Iowa Infantry, which was with Lyon and partially uniformed in gray. They, therefore, held their fire until the newcomers closed to within 35 yards. It was now too late, and the Confederates sent a volley crashing into Sigel's ranks and charged. Sigel's brigade broke and fled, leaving four of its six cannon.

With the defeat of Plummer's battalion and the destruction of Sigel's brigade, McCulloch reinforced Price's Missouri State Guard on Bloody Hill. Infantrymen from Arkansas advanced and took position in Price's battle lines. Soldiers of the South Kansas-Texas Cavalry Regiment, having been rallied by Col. Elkanah Greer, rode north out of the Skeggs Branch. Passing around Lyon's right, the Texans charged, but were repulsed by the fire of the Union artillery and its supporting infantry. The fight for Bloody Hill was savage. Although many of the Missouri and Arkansas forces were armed with shotguns, this was not a disadvantage, for the hillsides were covered with scrub oak and underbrush, and much of the fighting was at ranges of 30 paces or less.

Although Lyon's small army was outnumbered, his personal leadership inspired his men. General Lyon was seen wherever the fighting was the hardest. Following the destruction of Sigel's brigade, General Lyon was killed while leading the 2<sup>nd</sup> Kansas Infantry in counterattack. This chilled the ardor of his men. It was apparent to Major Samuel D. Sturgis, who had succeeded to command, that something had happened to Sigel's brigade. The foe continued to marshal additional men to his front, and Sturgis decided to withdraw. Screened by a vigilant rear guard, the Federals retired across the crest of Bloody Hill and started back to Springfield. The Southerners, having suffered heavy casualties and many officers killed or wounded, did not pursue.

In their hurry to leave the field, the Federals abandoned General Lyon's body, and the Confederates took it to the Ray House. That evening the General's remains were escorted through the lines into Springfield. When the Federals evacuated Springfield on August 11 and started on their 100-mile retreat to Rolla, Lyon's body was left behind and temporarily

buried in the garden of a Union sympathizer, U.S. Congressman John Phelps.

General McCulloch put his army into motion on August 11. Entering Springfield, the Confederates found that the Federals had abandoned the city early that morning. The Southerners, although possessing a formidable mounted force, failed to harass the retreating Union column. They thus provided the North with time in which to organize additional units and consolidate their control of most of Missouri.

In a futile effort to capitalize on the victory, General Price called on McCulloch to march with him to the Missouri River. McCulloch declined for several reasons. First, his force was required to protect northwest Arkansas and the Indian Territory. Many of his units had exhausted their supply of ammunition in the battle, and he could expect no cooperation from Confederate forces in northeast Arkansas. Finally, the Arkansas State Guard was recalled to claim their discharges on August 21.

General Price was compelled to continue his campaign to recover Missouri without the support of McCulloch's command. Although Price reached the Missouri River and in the third week of September compelled the Union garrison holding Lexington to surrender, the North had taken advantage of the time bought by Lyon and his men at the battle of Wilson's Creek. Large numbers of men had been concentrated in Missouri and General Price and his Missouri State Guard, unable to hold their gains, retreated for a second time into the southwest corner of the state. Thus the Southerners, although they were the victors at Wilson's Creek on August 10, 1861, lost the campaign and with it much of Missouri, a wealthy and populous state, the control of which was vital to the Union.

## **SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS**

The park's special mandates and administrative commitments are contained in the park's enabling legislation, Public Law 86-434. This act directed that the lands acquired by the secretary of the interior for the establishment of Wilson's Creek National Battlefield be set aside "for the benefit and enjoyment of the people of the United States." It also authorized the construction of roads, trails, markers, buildings, and other improvements, and such facilities for the care and accommodation of visitors as deemed necessary.

## **SERVICEWIDE MANDATES AND POLICIES**

A number of federal laws and NPS policies and practices guide the management of Wilson's Creek National Battlefield. These policies and practices guide the actions taken by park staff on topics such as relations with private and public organizations, natural and cultural resource management, water quality, special status species, exotic plants and animals, vegetation, cave resources, visitor use, visitor information, and sustainable practices.

These policies and practices would continue to guide park managers under all of the alternatives, including the preferred alternative. Park staff would continue to implement NPS policies and goals, as identified in NPS Management Policies (2001a), the NPS Strategic Plan, and many standard park practices.

The ongoing management policies and practices of Wilson's Creek National Battlefield are described below. For each topic discussed, there is a general statement that describes the NPS's desired future condition or goal for the park. The general

strategies or actions taken by park staff to achieve the desired conditions are also discussed. Some of the strategies described below are consistent with NPS policy and are not believed to be controversial.

The alternatives in this management plan/environmental impact statement include additional desired conditions and strategies in addition to the ongoing park policies and practices described below. These policies and practices would be combined with the alternative selected for implementation to form the complete General Management Plan for Wilson's Creek National Battlefield.

### **Relations with Private and Public Organizations, Adjacent Landowners, and Governmental Agencies**

Wilson's Creek National Battlefield is not an isolated resource — the park is an important cultural, social, and historical part of a larger geographic region. The NPS must consider how its actions would affect the surrounding environment and society.

***Desired Conditions:*** The NPS would manage Wilson's Creek National Battlefield holistically as part of a greater ecological, social, economic, and cultural system. The NPS would demonstrate leadership in resource stewardship and conservation of ecosystem values within and outside the park. Wilson's Creek National Battlefield would be managed proactively to resolve external issues and concerns and ensure park values are not compromised. (Source: *NPS Management Policies*, 2001.)

### **Cultural Resources**

The cultural resources at Wilson's Creek National Battlefield include historic structures, archeological sites (including farm sites, foundations of dwellings, and other buildings), and landscape features, all of

which are an integral part of the park landscape. Protection of these resources is essential for visitor understanding of the battle and its long-term implications for the Civil War in Missouri. The *Wilson's Creek Interim Resource Management Plan* (NPS 2000) provides details on the strategies and actions to address the park's most important cultural resource problems and research needs.

***Desired Conditions:*** The cultural resources at Wilson's Creek National Battlefield would be protected, and the integrity of the park's cultural resources would be preserved unimpaired. Park visitors would recognize and understand the value of the park's cultural resources. Wilson's Creek would be recognized and valued as an example of resource stewardship, conservation, education, and public use. (Sources: National Historic Preservation Act, Archeological and Historic Preservation Act, *NPS Management Policies* (2001a).

### **Collections**

Wilson's Creek National Battlefield manages and protects a diverse collection of over 40,000 museum objects related to the Battle of Wilson's Creek and the Civil War in the Trans-Mississippi West. It also manages archival and materials collections of over 4,500 volumes and extensive primary documentation. This collection constitutes one of the best Civil War libraries in the national park system.

***Desired Conditions:*** All museum objects, manuscripts, and other archival materials will be identified and inventoried and their significance determined and documented. The qualities that contribute to the significance of the park's collections will be protected in accordance with established policies. When additional museum objects and archival materials related to the Battle of Wilson's



Creek and the Civil War in the Trans-Mississippi become available, the park will make every effort to acquire these objects and materials to ensure their long-term preservation. (Sources: *NPS Management Policies*, National Historic Preservation Act, Archeological and Historic Preservation Act, Archeological Resources Protection Act.)

## **Natural Resources**

Protection, study, and management of the park's natural resources and processes are essential for achieving the park's purposes and mission. The Interim Resource Management Plan (NPS 2000) provides details on the strategies and actions to address the park's most important resource management problems and research needs.

***Desired Conditions:*** Wilson's Creek National Battlefield would retain its ecological integrity, including its natural resources and processes. The natural features of the park would remain unimpaired. The park's natural prairie and hydrological systems would be rehabilitated to a functional level. The park's limestone glades and mature upland woodlands would be preserved as significant resources. Natural resources would be managed in support of the interpretation of and rehabilitation of the historical cultural landscape. NPS personnel would use the best available scientific information and technology to manage the park's natural resources. Wilson's Creek would be recognized and valued as an outstanding example of resource stewardship, conservation, education, and public use. (Sources: National Environmental Policy Act, *NPS Management Policies*, 2001).

**Water Quality.** Wilson's Creek played a role in determining the location of the battle in August 1861. Today, it continues to shape the landscape, affect plants and animals, and contribute to the visitor experience at the

park. Nearby communities and landowners also rely on the water from Wilson's Creek that flows into and out of the park.

***Desired Conditions:*** The NPS would continue to work with local agencies and adjacent communities to improve the water quality of Wilson's Creek. (Sources: Clean Water Act, *NPS Management Policies*, 2001)

**Special Status Species.** The resource management plan promotes the conservation of the Missouri bladderpod and the gray bat, two federally listed species that are protected under the Endangered Species Act and NPS Management Policy (see "Environmental Consequences" section). Four state-listed species occur in the park as well, and are provided protection and conservation in resource management and rehabilitation programs.

***Desired Condition:*** The goal of the resource management program at Wilson's Creek National Battlefield is to perpetuate the natural distribution and abundance of these species. (Sources: Endangered Species Act, *NPS Management Policies*, 2001)

**Cave Resources.** Five caves fall within the boundaries of Wilson's Creek National Battlefield. In order to protect the resources within them, the caves are not open to visitors.

***Desired Condition:*** Wilson's Creek National Battlefield staff would use the best available scientific information and technology to maintain the environmental integrity of the caves as habitat for the gray bat, a federally protected species. (Sources: Federal Cave Resources Protection Act, *NPS Management Policies*, 2001.)

**Exotic Plants.** Rehabilitation of native vegetation and elimination or control of



exotic plant species contribute to the rehabilitation of the historical cultural landscape and is a goal of resource management at Wilson's Creek National Battlefield.

**Desired Condition:** Exotic plant species proliferation would be contained. Exotic plants gradually would be replaced by native vegetation. (Sources: Executive Order 13112, "Invasive Species," *NPS Management Policies*, 2001.)

### Visitor Use and Experience

The purpose of Wilson's Creek National Battlefield is to commemorate the significance of the Battle of Wilson's Creek. Increasing numbers of visitors, however, use the park for recreation. Park managers and staff are taking steps to ensure that the activities of runners, hikers, cyclists, and equestrians do not conflict with the park's core mission and do not infringe upon the ability of Civil War enthusiasts, school groups, and other visitors to experience and appreciate the park's significance.

**Desired Conditions:** Wilson's Creek National Battlefield would offer a variety of activities that are consistent with the park's purposes and significance. The vast majority of visitors would be satisfied with park facilities, services, and recreational opportunities. Most visitors would understand and appreciate the basic purposes and significance of the park and their stewardship role in preserving park features. They would actively contribute to the park's preservation through demonstrated appropriate use and behavior. Visitor use levels and activities would be consistent with park purposes and desired resource conditions and visitor opportunities. Resource impacts and conflicts between users would remain minimal (Wilson's Creek National Battlefield: 1999-2000 Visitor Use Study). Visitors would understand and support

management actions that are taken to diminish or avoid resource impacts. (Sources: NPS Organic Act, National Historic Preservation Act, *NPS Management Policies*, 2001.)

### Visitor Information, Orientation, Interpretation, and Environmental Education

The NPS uses a variety of methods to orient visitors to Wilson's Creek National Battlefield, to provide information about the park, and to interpret the significance of the park for visitors. The draft Wilson's Creek National Battlefield Interpretive Plan (NPS 1996) describes interpretation goals and objectives and interpretive themes. Interpretive themes are the key stories or concepts that are critical to a visitor's understanding of the park's significance. The themes listed below would provide the foundation for all interpretive media (e.g., exhibits, films, brochures) and programs at the park.

- Because Missouri was a western border state, social, economic, ethnic and political differences fueled animosities between groups, ultimately leading to civil war.
- The strategic importance of Missouri and the personalities, decisions, and motivations of political and military leaders greatly influenced the military campaign and battle.
- Many interrelated factors – leadership, tactics, weaponry, landscape and terrain features, and the use of volunteer forces – contributed to the outcome of the battle and resulted in an unusually hard-fought and bloody military engagement.
- While the Union's battlefield defeat, the death of General Lyon, and the potential loss of southwest Missouri by Federal troops forced the North to

reassess its commitment to the war in the Trans-Mississippi, the victory at Wilson's Creek gave hope and confidence to the South.

- The residents along Wilson's Creek found themselves engulfed in the violence of battle and subjected to guerilla warfare and severe military policies that they resented long after the war ended.
- The preservation and commemoration of the battlefield reflects the desire of people to remember and honor the dedication to duty, patriotism, and personal sacrifices of our ancestors.

These themes helped guide the development of the management alternatives; alternatives that did not support the communication of the themes were not considered.

The "Draft Wilson's Creek National Battlefield Interpretive Plan" (NPS 1996) specifies what NPS staff would do to provide visitors with information, orientation, and interpretation. The plan also addresses interpretive media, such as wayside exhibits, bulletin boards, and signs.

***Desired Conditions:*** The NPS makes pre-trip information available to assist visitors in planning a rewarding visit to the park. NPS staff uses the Wilson's Creek National Battlefield Web site, newsletters and other mailings, press releases, and public service announcements to publicize special events and assist visitors with planning. When visitors arrive at Wilson's Creek National Battlefield, the NPS staff provides orientation information regarding what to do (and what not to do), attractions to see, and how to use the park in a safe, low-impact manner. Interpretive programs connect the visitor to the park's resources, build a local and national constituency, and gain public support for protecting the park's resources. Outreach

programs through schools, organizations, and partnerships build emotional, intellectual, and recreational ties with the park and its cultural and natural heritage. (Sources: NPS Organic Act, National Historic Preservation Act, *NPS Management Policies*, 2001.)

## **Public Health and Safety**

A variety of visitors use and enjoy Wilson's Creek National Battlefield. Many of these come to experience the park's history and significance. Others use the park as a recreational facility and for open space. As visitation increases, greater numbers of walkers, bicyclists, and motorists would share the tour-road loop, raising the potential for visitor conflicts.

***Desired Conditions:*** Park staff would work to ensure that the diverse users of the tour-road loop would continue to share the resource by accommodating the needs of other users. (Sources: *NPS Management Policies*, 2001)

## **Cooperative Planning**

NPS management policy recognizes that units of the national park system are integral parts of larger regional environments. Accordingly, the NPS would work cooperatively with others to anticipate, avoid, and resolve potential conflicts, to protect park resources, and to address mutual interests regarding quality of life for community residents, while at the same time considering economic development and resource and environmental protection. Such regional cooperation would involve federal, state, and local agencies, American Indian authorities, neighboring landowners, and all other concerned parties.

Wilson's Creek National Battlefield managers would work to protect park resources and enhance the visitor experience by working cooperatively with regional governments,

organizations, and interest groups to identify issues that could impact the park; by communicating those issues to the public; and by searching for solutions in cooperation with park neighbors, nearby communities, and local governments. These issues include growth in nearby communities, development of greenways by cities near the park, residential development and transportation networks near park boundaries, and increasing recreational use of the park. NPS staff also would work with local citizens, governments, and special interest groups to identify and provide alternative recreation opportunities within, outside, and adjacent to the park.

Upon request from Wilson's Creek neighbors, park management would assist neighbors whose lands include portions of the battlefields in developing strategies for preserving the battlefield landscape. Cooperative agreements would be developed to guide federal and private initiatives.

The city of Springfield and Greene County are developing an interim comprehensive plan as part of their regional planning efforts. This plan, called Vision 20/20, addresses transportation initiatives, park, open space, and greenway development, issues that are of particular importance to Wilson's Creek National Battlefield. The South Creek/James River Greenway will connect the park to the city of Springfield. Planning for this greenway began in 1991; the plan does not cite a projected completion date for this project. Vision 20/20, the interim comprehensive plan, and the Wilson's Creek National Battlefield management plan would form the basis of cooperative planning between the city of Springfield, Greene County, and the park.

A number of other related planning efforts have been completed or are underway for Wilson's Creek National Battlefield and the

surrounding region. These include park documents such as the *Trail Plan: Wilson's Creek National Battlefield* (NPS 1988), the "Statement for Management, Wilson's Creek National Battlefield" (NPS 1992); the "Draft Cultural Landscape Report, Wilson's Creek National Battlefield"; and the "Draft Archeological Overview and Assessment, Wilson's Creek National Battlefield" (NPS 1999).

## **Sustainable Practices**

Sustainable practices can be described as the result achieved by acting in ways that do not compromise the environment or its capacity to provide for present and future generations. Sustainable practices minimize the short- and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy efficient and ecologically responsible materials and techniques.

Over the past several years, the federal government has been placing more emphasis on adopting sustainable practices. In particular, Executive Order 12873 mandates federal agency recycling and waste prevention, and Executive Order 12902 mandates energy efficiency and water conservation at federal facilities.

## **Visitor Center Addition**

The visitor center addition would be completed under all alternatives. This facility would provide adequate space for the research library; increased space for educational opportunities; safe curatorial storage and treatment area, and additional office and support space.



## DECISION POINTS

The decision points are key questions that must be answered in the management plan.

- 1) **Land Rehabilitation** – To what degree should the park's interpretive program or the cultural landscape rehabilitation program dominate visitor experiences?
- 2) **Recreational Use** – What level and type of recreational use should take place without creating an adverse

impact on resources and visitor experiences?

- 3) **Visitor Experience/Interpretation** – What level and type of interpretation could take place without creating an adverse impact on resources?
- 4) **Resource Management** – To what degree could the cultural landscape rehabilitation program be implemented without an adverse impact on the natural resources rehabilitation program?



**Alternatives,  
Including  
the  
Preferred  
Alternative**



## ALTERNATIVES, INCLUDING THE PREFERRED ALTERNATIVE

### INTRODUCTION

This chapter describes the five management prescriptions that identify how different areas in the park would be managed and describes the three alternatives developed for resource protection and visitor experience at the park. Two action alternatives are compared with the no-action alternative.

### MANAGEMENT PRESCRIPTIONS

The management prescriptions identify how different areas in the park would be managed to achieve a combination of desired resource conditions and visitor experience. The management prescriptions designed for Wilson's Creek National Battlefield are described below in terms of visitor experience, resources conditions, and appropriate activities or facilities.

As used in the section, "Appropriate Activities or Facilities," the term "recreation" refers to activities such as walking, hiking, wildlife viewing, cycling, running, horseback riding, and scenic driving along the tour-road loop. These activities are allowable so long as they do not detract from the ability of other visitors to appreciate the core significance of the park. "Passive" refers to activities such as walking, hiking, and wildlife viewing. The term "non-passive" refers to activities such as cycling, running, horseback riding, and automobile use.

#### **Visitor Services and Administration**

This area would provide support functions for carrying out the park's mission and objectives such as orientation, introductory

education and interpretive programs, and staff and administrative operations.

#### **Visitor Experience**

Visitors would make their initial park contacts in this area. They would receive park information and orientation and find picnic areas and parking. Visitors usually would gain their first understanding of the history of Wilson's Creek in this area through the film and museum exhibits. Space for some passive recreational activities such as walking and picnicking would be provided.

#### **Resource Condition**

The significant cultural or natural resources in this area would be contained and protected within the research library, the archival or curatorial storage, or in exhibits that provide greater visitor understanding of the events and meanings of the Battle of Wilson's Creek. No other significant cultural or natural resources would be found in this area. If previously unknown resources, such as archeological sites, were discovered in this area, zoning would be re-evaluated in order to implement appropriate management actions.

#### **Appropriate Activities or Facilities**

Passive recreational activities such as walking and picnicking could occur in this area. New facility development such as additional access points, parking, or equestrian staging, would be located here. Other facilities could include park entrance and parking areas, administrative offices, visitor center, research library, and maintenance areas.



## **Interpretive Focus Area**

This area would include specific sites for more focused interpretive programs such as demonstrations, guided tours, and special events. This area could include some significant resources.

### **Visitor Experience**

Visitors in this area would encounter both active interpretive experiences, such as lectures, presentations, and park ranger-led hikes and/or tours, as well as self-guided tours to significant sites. They could expect a high level of interaction with park staff and other visitors. Interpretive programs, displays, and/or wayside exhibits would explain the events and aftermath of the battle in the context of the Civil War in Missouri. Recreational activities that did not conflict with interpretive programs and presentations would be allowed in this area. Interpretive media that served all visitors, including recreational visitors, could be developed for this area.

### **Resource Condition**

Cultural and natural resources in this area would be protected in accordance with NPS management resource preservation policies. Visitors would encounter these resources and learn about their role in the story of Wilson's Creek through interpretive media or park ranger-led tours.

### **Appropriate Activities or Facilities**

Recreational activities such as running and hiking would be allowed in this area. Horseback riding would be allowed on the Wire Road. These activities would be managed so as to ensure their compatibility with the active and self-guided interpretive programs that would occur here. New

facilities for this area might include additional trails and interpretive displays.

## **Battlefield Landscape Enhancement Area**

Management in this area would focus on retaining and enhancing the general historic character of the park's battlefield landscape. This would provide visitors with an insight into the general conditions that the combatants encountered on August 10, 1861 and will facilitate the visitor's understanding of the dynamic course of this bitter battle. Vegetative changes since the time of the battle obscure the views that existed on that day and detract from the visitor's ability to read the landscape and appreciate the way that landforms, topography, and cultural features influenced the battle's evolution and eventual outcome. Clearing of weedy, woody, vegetative growth, maintenance of historic open fields, and the reestablishment of tall grass prairie, open timber communities, and other elements of the 19<sup>th</sup> century vegetation that characterized the park would help enhance the integrity of the historic setting. These actions would be guided by the 2001 NPS *Management Policies*, the 1996 *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, the recommended landscape treatments described in the "Draft Cultural Landscape Report for Wilson's Creek National Battlefield" (currently under development), and the park's vegetation management plan.

### **Visitor Experience**

Visitors in this area would experience the physical environment and ambience of Wilson's Creek Battlefield as it was known in 1861. Guided and self-guided tours would allow visitors to experience the park for themselves, while learning about the park's

important resources. Visitors would find opportunities for quiet contemplation of the meaning of Wilson's Creek and the sacrifices of the men who fought there. There would be a low probability of encountering park staff, and low to medium probability of encountering other visitors. Passive recreational uses would be allowed here; however, recreational users would be informed that their use of the park must be compatible with resource protection and management.

### **Resource Condition**

Park management would work to return the battlefield landscape to its 1861 appearance to as great a degree as feasible. This landscape featured oak savannah, limestone glades, matured woodlands, and cultivated fields. These features help define the historical landscape; cultivated fields constitute cultural resources in their own right. Natural resource management would be integrated in an overall program of cultural resource management of the historical landscape. Should previously unknown threatened or endangered species be found, those areas would be rezoned as part of the resource preservation area.

### **Appropriate Activities or Facilities**

Recreational activities such as horseback riding, running, and hiking may be appropriate here. The park staff would manage these areas to ensure that they were compatible with efforts to rehabilitate resources and habitat. Minimal development, including interpretive displays and trails following the alignment of historical traces, could occur in this area.

## **Resource Preservation Area**

This area would provide a high level of protection for highly sensitive and vulnerable cultural or natural areas and resources.

### **Visitor Experience**

Visitor use in these areas would be limited. Recreational activity would be limited to walking and hiking. Interpretive media would be developed to inform visitors of the special and fragile nature of this area and the need to tread lightly. There would be a moderate possibility of encountering park staff in this area and a low probability of encountering other visitors. Resource preservation would take precedence over visitor use in this area.

### **Resource Condition**

This area would include the park's highly sensitive cultural and natural resources. Resource preservation would be the highest priority for park management in this area. Resource protection measures consistent with NPS policy would be applied. Natural resource management would take precedence over cultural resource management in those areas containing threatened or endangered species.

### **Appropriate Activities or Facilities**

Appropriate activities in this area would be limited to research and passive recreational uses such as hiking. Habitat restoration for the park's threatened and endangered species would be a priority. Interpretive programs and exhibits would provide information and interpret ongoing research activities. No other facility development would occur in this area.

## **Landscape Maintenance Area**

This area would include those parts of the park that do not contain highly sensitive resources and are not high priorities for battlefield landscape enhancement. Park management would focus on the control of exotic plants, trail maintenance, maintaining vegetation to screen outside visual and auditory intrusions, and other general maintenance activities. Potential exists for additional trails in this area.

### **Visitor Experience**

Visitors in this area would have the opportunity to experience the rural character of the battlefield. Visitors here could expect a low probability of encountering park staff and a low to medium probability of encountering other park visitors. Visitors could engage in recreational activities such as horseback riding, hiking, or running.

### **Resource Condition**

This area would not contain the park's most significant cultural or natural resources. As part of the battlefield, however, this area is an important component of the park's cultural landscape. Park management would maintain the overall landscape appearance by controlling growth of exotic plant species and screening exterior visual and auditory intrusions. Management of the landscape in this area would enhance the ambience of the other management areas.

### **Appropriate Activities or Facilities**

This area would allow a range of both passive and nonpassive recreational activities, including hiking, running, and horseback riding, so long as these activities did not pose an adverse visual or auditory impact on visitors in other management areas. Facility development would be

limited to interpretive displays designed to reach recreational users, trails, and visitor comfort stations.

## **FORMULATION OF ALTERNATIVES**

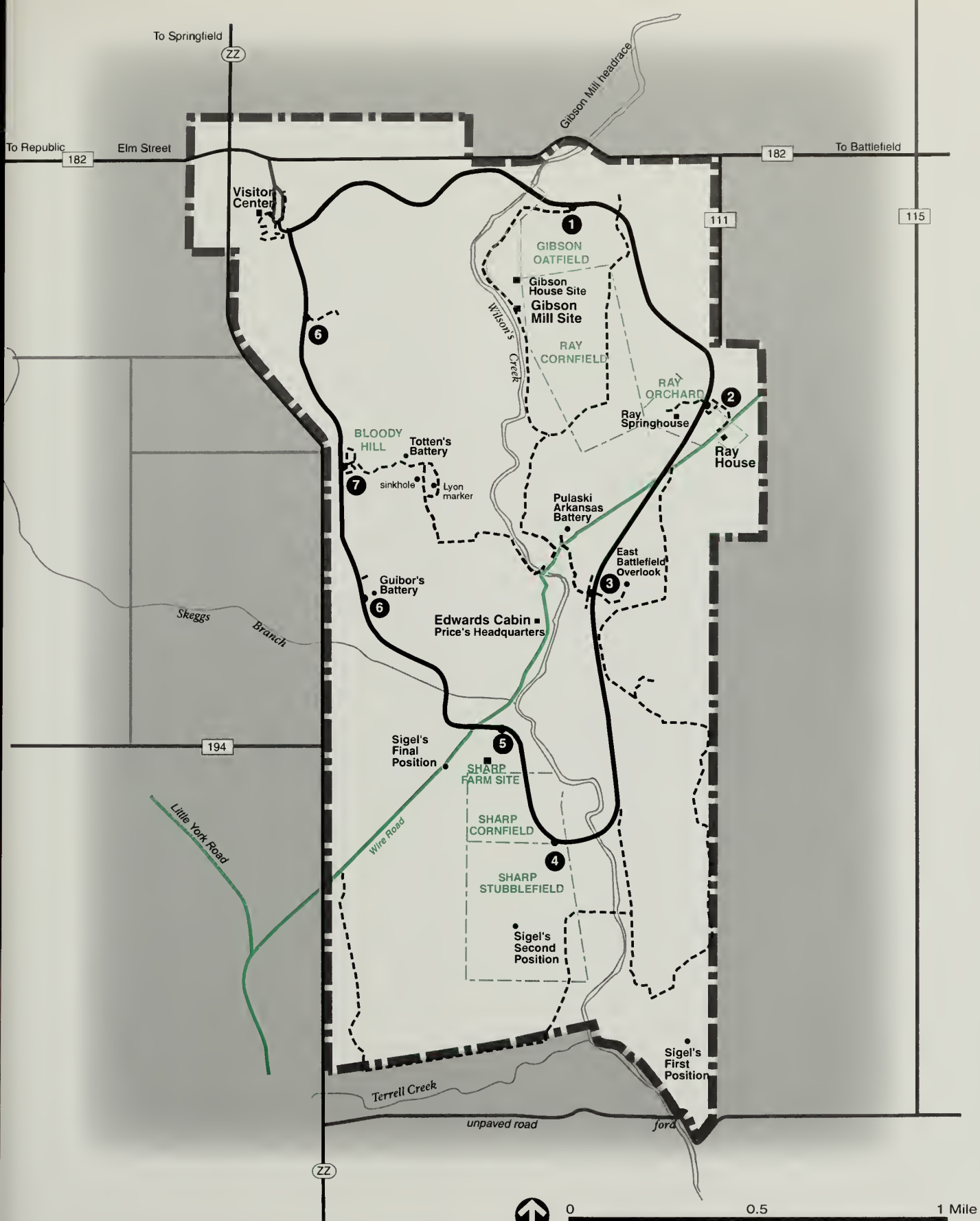
The management alternatives, including the preferred alternative, were developed by the NPS staff based on the issues or concerns, desired future conditions, and visitor experiences articulated by the NPS staff, subject matter specialists, park users, neighboring landowners, and the general public. The alternatives describe overall management concepts and the alternative ways in which the management prescriptions would be applied to the park.

### **Alternative A — No Action**

Management under alternative A would follow the 1977 *Master Plan* to manage and protect the park's cultural and natural resources. The current levels and types of recreational uses, including horseback riding, bicycling, running, and walking, would be allowed. The interpretive program would continue to offer both self-guided tours and park ranger-led programs that explain the Battle of Wilson's Creek and the Civil War in Missouri. Park staff currently involved in rehabilitation of the battlefield landscape would continue on a limited scale, as staffing and funding permit. Park staff would continue to undertake measures to control the spread of exotic and noxious plants and protect the threatened and endangered species found within the park boundaries.

The visitor center addition would be completed under this alternative. This facility would provide adequate space for the research library; increased space for educational opportunities; safe curatorial storage and treatment area, and additional office and support space.





0 0.5 1 Mile

## Alternative A No Action

### General Management Plan

Wilson's Creek National Battlefield

United States Department of the Interior • National Park Service

DSC • 410 • 20016 • OCT 2001

Interpretive programs, including guided tours and demonstrations, would continue to focus on tour groups, school groups, and visitors who make Wilson's Creek National Battlefield a destination stop. Improvements would be made to the interpretive program to enhance information provided to the visitors. Visitor services and interpretive programs would not be expanded to address recreational users. The park boundaries would not be adjusted under the no-action alternative.

The Existing Conditions map in the preceding chapter presents an illustration of existing conditions at the park. The Alternative A-No Action illustrates the no-action alternative.

#### **Alternative B — Wilson's Creek Battlefield Commemoration (Preferred Alternative)**

Management under alternative B would focus on efforts to honor memory of the Battle of Wilson's Creek through an array of interpretive and educational experiences that inform visitors of the special nature of Wilson's Creek National Battlefield. The park interpretive programs would emphasize a reflective and contemplative visitor experience that captures the site's unique qualities and its status as hallowed ground dedicated to sacrifice for principles and the human and social costs of the Civil War. Park management would work with local schools, museums, and universities, as well as officials and agencies from the cities of Springfield, Battlefield, and Republic, and Greene and Christian Counties, in communicating to the public the meaning and significance of the park's history and resources (please see the Alternative B – Preferred Alternative map).

Interpretation would be a major focus in the park. Interpretive displays would be

designed to enhance the visitor's experience. Park ranger-led programs would occur along interpretive trails or at interpretive sites. Other experiences would be self-directed. Visitors using park maps and brochures would follow the tour-road loop to important sites where interpretive signs would provide information about the events that occurred there. Marked trails would guide and inform visitors about the important resources at each site. The park's trail network would be realigned along historical trails and traces wherever possible. New trails in the park would be developed along the routes of historical trails and traces whenever possible in order to strengthen all visitors' connection to the historical scene. Planning for the interpretive program would emphasize aesthetically compatible media that are discrete and unobtrusive.

Rehabilitation of the landscape would be extensive; 718 acres, or 41 percent of the park, would be located in the Battlefield Landscape Enhancement zone. Returning portions of the park to the 1861 condition and appearance as much as is practicable would enhance visitors' ability to envision the events of August 10, 1861. Data compiled in the draft cultural landscape report would enhance park management's effort to rehabilitate the landscape. Recreational use would be allowed, but managed so as not to detract from the park mission, visitor experience, and efforts toward landscape rehabilitation. Horseback riding would be allowed only on designated trails as long as this use did not affect the experience for other visitors. Passive recreational activities such as hiking would be allowed in the interpretive focus area. The exception would be equestrian use along the Wire Road. Additional services, such as interpretive information and park ranger-led tours, would not be developed for recreational users.

Visitor access would be allowed in areas with sensitive resources, either with guided tours or self-guided interpretive trails.

Park management would monitor levels of recreational use for potential impacts on resources or the visitors' ability to contemplate the significance and meaning of the battle. When conflicts occurred, park management would limit recreational use wherever and to whatever degree necessary to ensure the visitors' ability to contemplate and appreciate the park's history and significance.

Park management would cooperate with agencies and officials from the cities of Springfield, Battlefield, and Republic, and Greene and Christian counties in developing long-range regional plans. These planning efforts would focus on both regional and park issues, seeking solutions to the impacts of increased suburban growth, transportation development, and visual intrusions on the park's boundaries. The landscape maintenance zone would include much of the park's perimeter within the boundary.

Vegetation management in this area would help mitigate impacts resulting from visual and auditory intrusions.

Park staff would respond promptly to conflicts that arose over management activities, visitor access, and proposed activities and developments on adjacent lands that could affect Wilson's Creek.

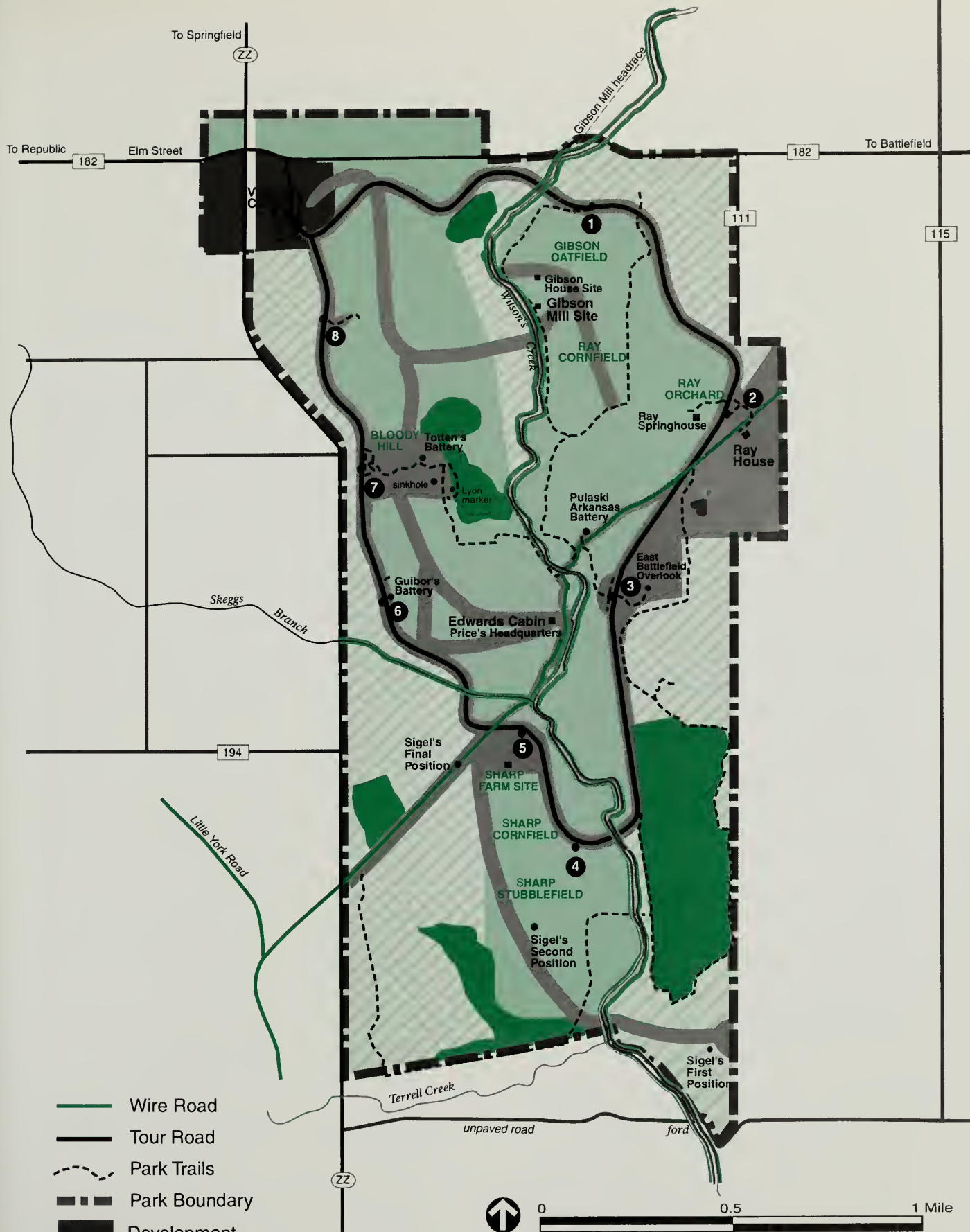
NPS managers would seek understanding and cooperation with landowners to encourage management of non-federal lands in a manner compatible with park purposes. NPS staff would also seek ways to provide landowners with technical and management assistance to address issues of mutual interest. The NPS would work closely with local, state, and federal agencies whose programs affect or are affected by activities at Wilson's Creek National Battlefield.

Table 2 and the map for the preferred alternative present the management prescriptions and designated management areas composing this alternative.



**TABLE 2. ALTERNATIVE B MANAGEMENT AREAS AND SITES**

<b>Management Areas</b>	<b>Size</b>	<b>Sites Located in Management Area</b>
Development and Administration	123 acres	<ul style="list-style-type: none"> <li>▪ The northwest corner of the park, encompassing the visitor center and research library</li> <li>▪ The parking area, expanded to include equestrian parking</li> <li>▪ The picnic areas and maintenance facility</li> </ul>
Interpretive Focus	222 acres	<ul style="list-style-type: none"> <li>▪ The tour-road loop and shoulders</li> <li>▪ The Ray House, and areas to the north and south; east of the tour-road loop, and bisected by the Wire Road</li> <li>▪ The western half of Bloody Hill</li> <li>▪ Interpretive trails and wayside exhibits within and outside the tour-road loop</li> </ul>
Battlefield Landscape Enhancement	718 acres	<ul style="list-style-type: none"> <li>▪ The northeast corner of the park</li> <li>▪ most of the interior of the tour-road loop</li> <li>▪ the Sharp farm site, cornfield, and stubble field, south of the tour-road loop to the park's south boundary</li> </ul>
Resource Preservation	154 acres	<ul style="list-style-type: none"> <li>▪ the glades near the tour-road loop on the north end of the park</li> <li>▪ the glades on Bloody Hill</li> <li>▪ the woodlands of the Manley Cemetery</li> <li>▪ the glade north of the Wire Road in the southwestern quadrant</li> <li>▪ the caves near the Gibson Mill site and west of the Sharp stubble field</li> </ul>
Landscape Maintenance	546 acres	<ul style="list-style-type: none"> <li>▪ the northeast corner of the park outside the tour-road loop</li> <li>▪ the southeast corner of the park</li> <li>▪ the southwest quadrant of the park</li> <li>▪ the western edge of the park, outside the tour-road loop</li> </ul>



## Alternative B Preferred Alternative

Management Prescriptions  
General Management Plan  
Wilson's Creek National Battlefield  
United States Department of the Interior • National Park Service  
DSC • 410 • 20017 • March 2002

## **Alternative C — Wilson's Creek Civil War Research Center**

Alternative C would focus on a distinctive combination of Wilson's Creek National Battlefield's outstanding site integrity and vast archival collection to develop the park as an outstanding research center focusing on the Civil War in Missouri, Arkansas, Kansas, and other areas west of the Mississippi River. See the Alternative C map for a list of features.

Historical and scientific research in support of resource preservation, rehabilitation, and interpretation of the park's history and significance would be the management focus for this alternative. Historical, genealogical, archeological, and biological research in park archives and at significant resource sites would be encouraged. These research activities would all have the potential of providing additional information on the park's history and significance and thus enhancing the visitor experience. The park would work with universities and state agencies in developing strategies for managing its collection, outlining archival research guidelines, and establishing protocols for archeological investigations. These research programs would enhance interpretive efforts to inform and educate park visitors and develop educational outreach programs for local communities. Internet technology would be used to facilitate research, interpretation, and outreach programs.

Park staff trained in archival management would assist professional and non-professional researchers in the research library and park collections. School groups, tour groups, and other park visitors would be encouraged to visit significant cultural and natural resource areas and research sites whenever appropriate. These sites would be interpreted to explain methods of data

recovery and how these efforts ultimately would contribute to a better understanding of Wilson's Creek.

Less than 10 percent of the park, or 139 acres, would be included in the Battlefield Landscape Enhancement area. Only selected primary sites of the battlefield landscape would be rehabilitated to their general 1861 appearance. This reduced emphasis on rehabilitation would enable park staff to focus efforts on interpretive and educational programs and on assisting researchers. Archeological, historical, and biological research potentially could provide additional data and guidance for more accurate battlefield rehabilitation. As research efforts provided more information about the battlefield landscape, park management may wish to consider negotiating cooperative agreements with neighboring landowners to maintain the integrity of the surrounding landscape that was critical to the battle.

Recreational uses, including horseback riding, bicycling, running, and walking would be allowed and managed so as not to impede visitors who wished to focus on the history and significance of Wilson's Creek. Highly significant resources and archeological or other on-site research would occur in the resource preservation area. Recreational use in this area would be limited to hiking and walking.

A total of 726 acres, or 41 percent of the park, would be zoned for landscape maintenance. Park management would monitor levels of recreational use or research activities for potential impacts on resources or on visitors' ability to contemplate the significance and meaning of the battle. Where conflicts occur, park management would limit recreational use to ensure the visitor's ability to contemplate and appreciate the park's significance.



Park management would cooperate with agencies and officials from the cities of Springfield, Battlefield, and Republic, and Greene and Christian counties in developing long-range regional plans. These planning efforts would focus both on regional and park issues, seeking solutions to the impacts of increased suburban growth, transportation development, and visual intrusions on the park's boundaries. The landscape maintenance area would include much of the park exterior. Vegetation management in this area would help mitigate impacts resulting from visual and auditory intrusions.

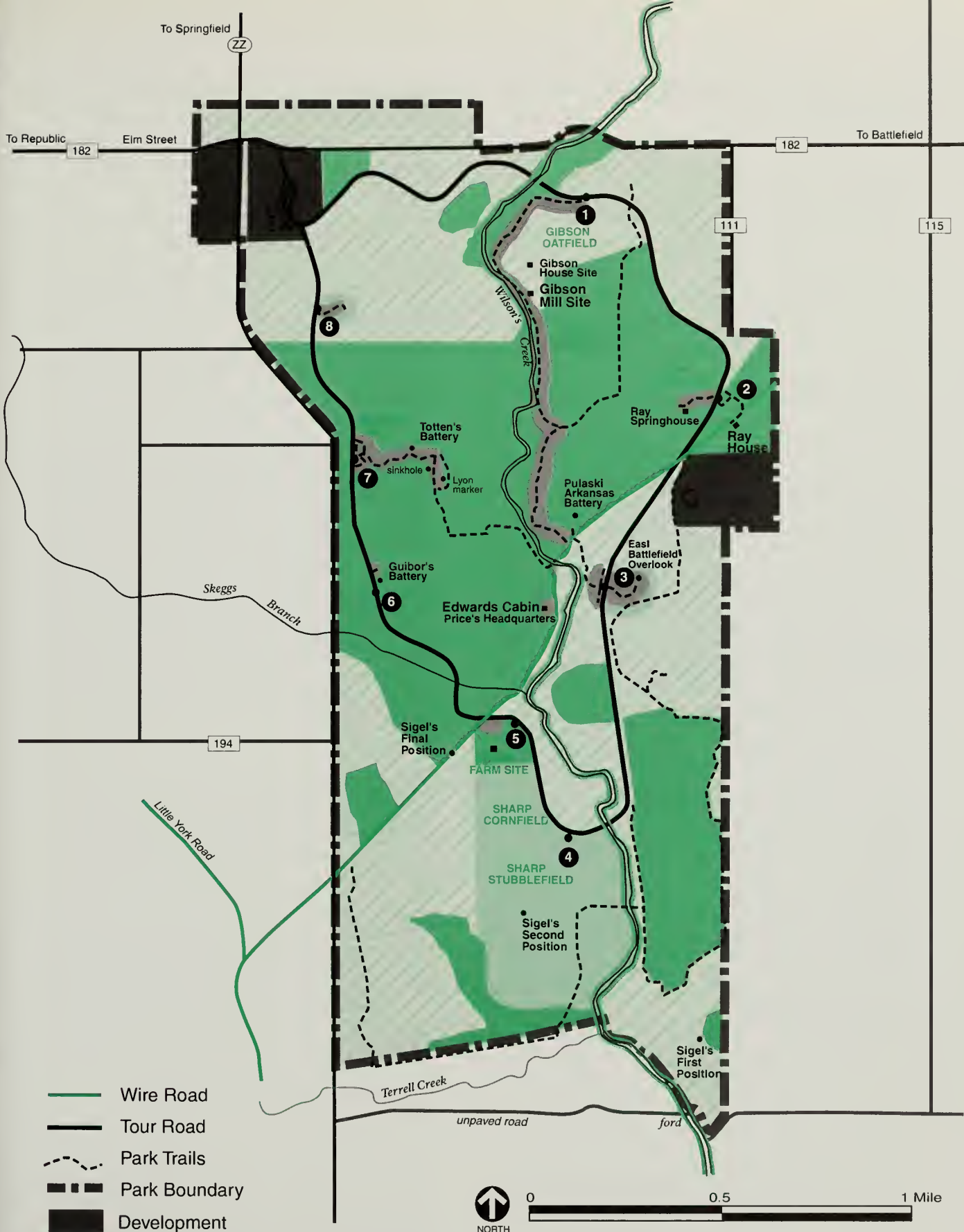
Park staff would respond promptly to conflicts that arose over management activities, visitor access, and proposed activities and developments on adjacent lands that could affect Wilson's Creek.

NPS managers would seek understanding and cooperation with landowners to encourage management of their lands in a manner compatible with park purposes. NPS staff would also seek ways to provide landowners with technical and management assistance to address issues of mutual interest. The NPS would work closely with local, state, and federal agencies whose programs affect or are affected by activities at Wilson's Creek National Battlefield.

The Alternative C – Adapting to Outside Change map and table 3 present management prescriptions and designated management areas comprising this alternative.

**TABLE 3. ALTERNATIVE C MANAGEMENT AREAS AND SITES**

<b>Management Areas</b>	<b>Size</b>	<b>Sites Located in Management Area</b>
Development and Administration	154 acres	<ul style="list-style-type: none"> <li>the visitor center and research library</li> <li>the parking areas, including equestrian parking</li> <li>the picnic areas, the maintenance facility, and the tour-road loop and shoulders</li> </ul>
Interpretive Focus	60 acres	<ul style="list-style-type: none"> <li>the exterior of the Ray House</li> <li>the Pulaski Battery site</li> <li>Guibor's Battery site</li> <li>Price's Headquarters site</li> <li>west and east battlefield overlooks</li> <li>the interpretive trails and wayside exhibits on Bloody Hill and in the interior of the tour-road loop</li> <li>the trail to the Ray springhouse</li> </ul>
Battlefield Landscape Enhancement	139 acres	<ul style="list-style-type: none"> <li>the view shed west of the Pulaski Battery and Price's Headquarters site</li> <li>the Sharp farm site, cornfield, and stubble field</li> <li>the historical overview of the Union advance and withdrawal</li> </ul>
Resource Preservation	661 acres	<ul style="list-style-type: none"> <li>the glades near the tour-road loop on the north end of the park.</li> <li>the central portion of the landscape within the tour-road loop</li> <li>the glade and surrounding landscape south of the Ray House</li> <li>the area east and south of the tour-road loop on the park's east boundary</li> <li>the caves near the Gibson Mill site and west of the Sharp stubble field</li> <li>the area between the tour-road loop and the park's west boundary</li> </ul>
Landscape Maintenance Area	726 acres	<ul style="list-style-type: none"> <li>the northwest corner of the park, north and south of the developed area, and the northern portion of the interior of the tour-road loop</li> <li>the northeast corner of the park</li> <li>the east side of the park, east and west of the tour-road loop.</li> <li>the extreme southeast corner of the park.</li> <li>the southwest quadrant of the park, west and south of the tour-road loop, bisected by the Wire Road</li> </ul>



## Alternative C Wilson's Creek Civil War Research Center

Management Prescriptions  
General Management Plan  
Wilson's Creek National Battlefield  
United States Department of the Interior • National Park Service  
DSC • 410 • 20021 • March 2002



## **ALTERNATIVES CONSIDERED BUT REJECTED**

In addition to the alternatives described above, one other alternative concept was explored. This alternative addressed the rapid development of lands outside the park by adapting the existing park infrastructure to outside change, primarily the future development of nearby communities. For example, greenway trails originating in nearby communities would have been integrated into the park's existing trail system. A variety of recreational uses, such as hiking, running, bicycling, and horseback riding, would have been welcomed. The interpretive program would have been expanded to reach recreational users.

This alternative was rejected after careful consideration by the planning team, park management, and other NPS resource and planning specialists. As stated in the "Purpose and Need" section, the purpose of Wilson's Creek National Battlefield is to commemorate the Battle of Wilson's Creek and to preserve the associated battlefield, not to provide recreational opportunities for park users. Increases in recreational uses such as bicycling, running, and horseback riding would detract from the park's purpose and programs, and the ability of the individual visitor to contemplate the meanings of the Battle of Wilson's Creek in the context of the Civil War. It was determined that a management strategy focusing on recreational activities was not consistent with the purpose of the park. Therefore, the park should not take steps to encourage additional recreational use of Wilson's Creek.

Based on this consideration, this alternative concept was eliminated from further analysis.

## **BOUNDARY ADJUSTMENTS AND LAND PROTECTION**

### **Application of Potential Boundary Adjustments**

#### **Alternative A — No Action**

There would be no adjustment to the park boundaries under the no-action alternative.

#### **Alternatives B and C — The Action Alternatives**

Under the action alternatives, the park boundaries would be adjusted to incorporate areas 1 through 6, shown on the boundary assessment map in the "Planning Context" section of the document. These areas contain lands critical to the outcome of the battle; acquisition of these lands would extend park protection to these battle-related resources. Access to and interpretation of these lands would greatly enhance visitor understanding of the full scope of the Battle of Wilson's Creek.

These are significant battle-related areas that also have great educational and research potential for visitors and researchers. They are described in detail in the "Planning Context" section of this document.

Archeological research in Area 1 could pinpoint the location of Sigel's first position. This research, combined with access to the site, would greatly enhance visitor understanding of the early stages of the battle and the ways in which topography and other landscape features influenced the course of the battle.

Archeological research in Area 2 would assist historians and other researchers in determining the exact extent of the fight on Bloody Hill. As in Zone 1, access to this area would enhance visitor understanding of

the ways in which the landscape determined military tactics during the critical points of the battle.

Restored portions of the Wire Road in Area 3 could enhance visitor experience and understanding of the region's historic transportation network and its influence on the outcome of the battle.

Research in Area 4 could identify the exact line followed by Lyon's wing of the Army of the Southwest. Access to this area would give visitors the opportunity to approach the battlefield in the footsteps of the Union Army, thereby gaining a new perspective of the battlefield landscape.

Research in Area 5 could determine the lands near the Ray House where Union artillery fire disrupted Confederate infantry movements and the exact location of the Confederate rally. Again, increased access to this area would enhance visitor understanding of the ways in which landscape features altered the course of the battle.

In addition to containing lands that are significant to the Battle of Wilson's Creek, these areas also could enhance visitors' ability to access and enjoy the park. Visitor access primarily would be provided through easements or the development of cooperative agreements with willing landowners. These lands would be added to the park ownership through fee-simple acquisition only if there was a willing seller.

Park ownership of the General Sweeney Museum (area 6) would ensure adequate protection for this important Civil War collection. This museum experience completes the contextual picture of the Battle of Wilson's Creek and the Civil War in the Trans-Mississippi West, thus

enhancing the overall visitor experience at the park.

As critical components of the Wilson's Creek Battlefield, areas 1 through 5 potentially would be included in the battlefield landscape enhancement management area. Area 6 potentially would be included in the visitor services and administration management area.

## **COMPARISON OF ENVIRONMENTAL CONSEQUENCES**

The probable consequences of each alternative on the impact topics described in chapter 3, Affected Environment, are provided below in table 4. Table 4 presents only conclusions and abbreviated descriptions to explain those conclusions. For a detailed analysis of the impacts of the management alternatives, please see chapter 4, "Environmental Consequences".

## **ACTIONS COMMON TO ALL ALTERNATIVES**

Additions to the park's trail system would be developed along the routes of historical trails and traces wherever possible. (See the Historic and Existing map.) The 1960 historical base map for Wilson's Creek prepared by NPS Historian Edwin C. Bearss identifies Wilson's Creek's trails and roads at the time of the battle. This data would provide park staff with guidance in planning modifications and additions to the trail network.

Recreational users could use the park tour-road loop for scenic auto touring, bicycling, running, and walking. Recommendations in the "Draft Wilson's Creek Transportation Study" would be used to determine strategies for accommodating and managing acceptable levels of multiple use on the tour-

road loop. Walkers, hikers, horseback riders, and runners could use designated trails in areas and at levels that did not detract from the historical scene. Acceptable recreational activities would be casual in nature. Competitive events such as running races or bicycle time trials would not be allowed. Speed limits for automobiles and bicyclists would be set to complement the battlefield's commemorative quality and rigorously enforced. Cycling would be limited to hardened surfaces; cycling on unpaved trail surfaces would not be allowed.

## **ENVIRONMENTALLY PREFERABLE ALTERNATIVE**

The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act. Ordinarily, this means the alternative that would cause the least damage to the biological and physical environment; it also means the alternative that would best protect, preserve, and enhance historic, cultural, and natural resources. Alternative B, Wilson's Creek National Battlefield Commemoration, which has been selected as the National Park Service's preferred alternative, is also the environmentally preferable alternative. Three of the six criteria listed in NEPA are particularly relevant:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
- preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice.

In the process used to select the preferred alternative, alternative B was found to have the best overall potential for protecting and preserving the historic, cultural, and natural resources of Wilson's Creek National Battlefield. Alternative B provides for a broad range of visitor experiences that do not pose a conflict with the park's legislated mandate to commemorate the Battle of Wilson's Creek. More of the battlefield landscape would be rehabilitated under this alternative than either of the other action alternatives. New development would be limited to additional parking for equestrians.



TABLE 4. SUMMARY OF IMPACTS

IMPACT TOPIC	ALTERNATIVE A – No Action	ALTERNATIVE B – Battlefield Commemoration	ALTERNATIVE C – Civil War Research Center
<b>Cultural Resources</b>			
<b>Historic Sites and Structures</b>	Negligible, short- and long-term, adverse impact due to increased vandalism, theft, and accidental damage associated with increased visitation. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.	No impact. <b>Cumulative Effect:</b> No contribution.	No impact. <b>Cumulative Effect:</b> No contribution.
<b>Archeological Resources</b>	Minor, long-term, adverse impacts due to increased vandalism, theft, and accidental damage associated with increased visitation. <b>Cumulative Effect:</b> Minor, long-term, adverse contribution.	Negligible, long-term, adverse impact due to potential disturbance associated with trail and parking lot construction. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.	Negligible, long-term, adverse impact due to potential disturbance associated with trail and parking lot construction and historical excavations. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.
<b>Cultural Landscapes</b>	Minor, long-term, beneficial impact due to limited rehabilitation of landscape to 1861 condition. <b>Cumulative Effect:</b> Minor, short-term and long-term, beneficial contribution.	Major, long-term, beneficial impact due to extensive rehabilitation of the landscape to 1861 conditions. <b>Cumulative Effect:</b> Major, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to landscape rehabilitation and vegetative screening. <b>Cumulative Effect:</b> Moderate, long-term, beneficial contribution.
<b>Archival/Museum Collections</b>	Minor, short-term and long-term, adverse impact due to increased use and gradual degradation of archival materials. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.	Minor, short-term and long-term, adverse impact due to increased use and gradual degradation of archival materials. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.	Minor, short-term and long-term, adverse impact due to increased use and gradual degradation of archival materials. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.
<b>Visitor Experience and Aesthetic Resources</b>			
<b>Visitor Use</b>	Minor to moderate, long-term, adverse impact due to parking restrictions and increased visitation. <b>Cumulative Effect:</b> No contribution.	Moderate, long-term, beneficial impact due to increased parking and areas for passive recreation. <b>Cumulative Effect:</b> Minor, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to increased parking, areas for passive recreation, and interpretive and educational opportunities. <b>Cumulative Effect:</b> Minor, long-term, beneficial contribution.
<b>Visitor Experience and Interpretation</b>	Moderate, long-term, adverse impact due to parking restrictions, increased visitation, and visitor conflicts. <b>Cumulative Effect:</b> Moderate, long-term, adverse contribution.	Moderate, long-term, beneficial impact due to increased parking and areas for passive recreation. <b>Cumulative Effect:</b> Minor, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to increased parking, areas for passive recreation, and interpretive and educational opportunities. <b>Cumulative Effect:</b> Moderate, long-term, beneficial contribution.
<b>Visual and Scenic Resources</b>	Minor, long-term, adverse impact due to parking restrictions, increased visitation, and vehicular traffic, and distribution of parked vehicles along tourist-loop road. <b>Cumulative Effect:</b> Minor, long-term, adverse contribution.	Moderate, long-term, beneficial impact due to preservation of open space, reduction of dispersed parking, rehabilitation of landscape to 1861 conditions, and vegetative screening of external, visual intrusions. <b>Cumulative Effect:</b> Moderate, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to preservation of open space reduction of dispersed parking, and vegetative screening of external, visual intrusions. <b>Cumulative Effect:</b> Moderate, long-term, beneficial contribution.
<b>Natural Resources</b>			
<b>Soils</b>	Negligible, long-term, adverse impact due to trail erosion. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.	Minor, long-term, adverse impact due to increased impermeable and erodible surfaces. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.	Minor, long-term, adverse impact due to increased impermeable and erodible surfaces. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.
<b>Water Quality</b>	No impact. <b>Cumulative Effect:</b> No contribution.	No impact. <b>Cumulative Effect:</b> No contribution.	Negligible, long-term, adverse impact due to increased runoff and erosion associated with research excavations in close proximity to Wilson's Creek. Implementation of best management practices would reduce runoff and sedimentation. <b>Cumulative Effect:</b> Negligible, long-term, adverse contribution.
<b>Vegetation</b>	Minor to moderate, long-term, beneficial impact due to preservation of open space and gradual rehabilitation of native plant communities. <b>Cumulative Effect:</b> Minor to moderate, long-term, beneficial contribution.	Major, long-term, beneficial impact due to rehabilitation of approximately 700 acres of vegetation to 1861 conditions. <b>Cumulative Effect:</b> Moderate, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to rehabilitation of approximately 139 acres of vegetation to 1861 conditions. <b>Cumulative Effect:</b> Minor, long-term, beneficial contribution.



IMPACT TOPIC	ALTERNATIVE A – No Action	ALTERNATIVE B – Battlefield Commemoration	ALTERNATIVE C – Civil War Research Center
<b>Natural Resources (continued)</b>			
<b>Wildlife</b>	Minor, long-term, beneficial impact due to preservation of open space and gradual rehabilitation of native plant communities. <b>Cumulative Effect:</b> Minor, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to preservation of open space and provision and rehabilitation of habitat diversity. <b>Cumulative Effect:</b> Moderate, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to preservation of open space and provision and rehabilitation of habitat diversity. <b>Cumulative Effect:</b> Moderate, long-term, beneficial contribution.
<b>Special Status Species</b>	Minor to moderate, long-term, beneficial impact due to preservation of open space, gradual rehabilitation of native habitats, and protection of sensitive areas, including caves inhabited by gray bat and grotto salamander. <b>Cumulative Effect:</b> Minor, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to protection of all areas that support special status species from intensive visitor use, rehabilitation of historic habitats more conducive to sustaining populations of special status plants, and protection of sensitive areas, including caves inhabited by gray bat and grotto salamander. <b>Cumulative Effect:</b> Moderate, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to protection of most areas that support special status species from intensive visitor use, rehabilitation of historic habitats more conducive to sustaining populations of special status plants, and protection of sensitive areas, including caves inhabited by gray bat and grotto salamander. <b>Cumulative Effect:</b> Moderate, long-term, beneficial contribution.
<b>Social and Economic Environment</b>			
<b>Recreation and Leisure</b>	Minor, long-term, beneficial impact due to increased recreational use of the park. <b>Cumulative Effect:</b> Minor to moderate, long-term, beneficial contribution.	Minor, long-term, beneficial impact due to increased interpretive and educational opportunities. <b>Cumulative Effect:</b> Negligible, long-term, beneficial contribution.	Moderate, long-term, beneficial impact due to expanded recreational areas and opportunities within the park. <b>Cumulative Effect:</b> Minor to moderate, long-term, beneficial contribution.
<b>Park Access and Transportation</b>			
<b>Access and Transportation</b>	Minor, long-term, adverse impact due to inadequate parking. <b>Cumulative Effects:</b> Negligible, long-term, adverse contribution.	Minor, long-term, beneficial impact due to improved parking facilities. <b>Cumulative Effects:</b> Negligible, long-term, beneficial contribution.	Minor, long-term, beneficial impact due to improved parking. <b>Cumulative Effects:</b> Negligible, long-term, beneficial contribution.

**Affected  
Environment**





## AFFECTED ENVIRONMENT

### INTRODUCTION

Wilson's Creek National Battlefield is located five miles southwest of Springfield, Missouri, and three miles east of Republic, Missouri, in the southwest corner of the state. The county line between Greene and Christian Counties bisects the 1,750-acre park, which includes 75 percent of the actual battleground. Wilson's Creek National Battlefield provides visitors with an array of opportunities and experiences that enhances their understanding of the significance of the site and its role in the Civil War west of the Mississippi River. At the visitor center, battle-related exhibits, a 13-minute video, and a fiber-optics map provide historical context and give visitors a sense of the physical dimensions of the battle. In addition, the park's research library is available to researchers by appointment. The park maintains partnerships with local municipal and county governments and other Civil War related sites, such as the General Sweeney Museum of Civil War History, located in Missouri north of Wilson's Creek National Battlefield.

This chapter describes the existing cultural and natural resources located on the Wilson's Creek National Battlefield, visitor use, experience, and interpretation issues, and socioeconomic data.

### CULTURAL RESOURCES

#### Historical Sites and Structures

Wilson's Creek National Battlefield is listed on the National Register of Historic Places. Specific sites and structures related to the 1861 battle are also listed and include the following:

#### Structures

- Ray House

#### Sites

- Ray Spring House
- Ray cornfield
- Gibson's Mill
- Edwards Cabin
- Sharp House
- Sharp's cornfield
- Short farmstead
- T.B. Manley House
- C.B. Manley House
- Gwinn House
- Manley Cemetery
- Edgar Cemetery
- Lyon marker
- Bloody Hill
- the Sinkhole
- Wire Road
- Sigel's artillery position

Objects on the National Register listing include artifacts related to the battle that reside in the park collection.

#### Archeological Resources

The park includes 50 archeological sites, half of which date from before European contact. The battlefield itself has not been recorded as an archeological site. The National Park Service is doing a 100% archeological survey and sites would be nominated for listing in the National Register, as appropriate.

#### Cultural Landscape

At the time of the battle, the valley of Wilson's Creek was a thriving agricultural setting with several farms and homes for numerous families. Only a few remnants of this agricultural community remain. Other

landscape features played key roles in the outcome of the battle. The park's significant landscape features include the following:

- The Ray House built in 1852. This house and the spring house at the bottom of the hill are the only structures in the park that date from the battle
- Wire Road
- the Ray cornfield
- the Gibson Mill site
- Price's Headquarters' site
- the Sharp cornfield and Sharp stubble field
- the Pulaski Arkansas Battery site
- Sigel's first, second, and final positions
- Guibor's Battery site
- Tote's Battery site
- Bloody Hill
- the Lyon marker
- the historic overlook of the Union advance and withdrawal

In accordance with the 1977 *Master Plan*, approximately 250 acres of the park landscape has been rehabilitated to its 1861 appearance. The park's cultural landscape is potentially eligible for inclusion on the National Register of Historic Places.

A draft cultural landscape report (CLR) for Wilson's Creek has recently been completed. In assessing the integrity of Wilson's Creek National Battlefield, the CLR team concluded that overall the battlefield landscape at Wilson's Creek retains fair to good physical integrity. The document indicates that the vegetative changes that have taken place since the battle are a reversible condition. Vegetation management consistent with the park vegetation management plan and the cultural landscape report treatment recommendations can modify the park's appearance to re-

semble more closely the historic conditions, thereby enhancing the park's integrity.

The draft CLR also finds that several individual landscape features, such as the McElhaney Farm, the County Road bridge, and two stone field walls, may be eligible for the National Register and contribute to a National Register district associated with Wilson's Creek National Battlefield. In addition, the CLR finds four other historic associations with park resources. These include the following:

- archeological resources dating from the Early Archaic period
- the John Ray House complex as one of three early settlement dwellings in the Springfield area
- the Wire Road as an important early transportation route associated with Civil War troop movements, the Butterfield Overland Stage line, and the Cherokee Trail of Tears
- expansion of the issue of efforts to commemorate the battle's significance

The CLR also suggests that two additional periods of significance should be added to the current August 10, 1861 period of significance. The three periods recommended are:

- Archaic through Mississippian periods – ca. 10,000 BP through 1700 AD
- Civil War Battle of Wilson's Creek – August 10, 1861
- commemoration of the battle and the death of General Lyon – 1861 to 1960

The CLR suggests that specific resources may have their own periods of significance, such as the Wire Road (1836–1900), the Ray



House (1852), and the McElhaney Farm complex (1911). The CLR recommends that the National Register nomination be revised to include extant areas surrounding the park.

### **Archival/Museum Collections**

The park's large archival and materials collection includes over 4,400 volumes and extensive primary documentation. The museum collection contains approximately 40,000 artifacts related to the battle and the Civil War in the Trans-Mississippi region. These include one-of-a-kind pieces directly related to the battle, such as General Lyon's presentation sword and scabbard, the Lyon bed, and the counterpane used to cover Lyon's dead body.

### **VISITOR EXPERIENCE AND AESTHETIC RESOURCES**

#### **Visitor Use**

Information regarding visitation at Wilson's Creek National Battlefield is limited. Most existing information is based on traffic counter readings and/or staff observations. To supplement that information, as part of the general management planning process, the NPS commissioned the University of Minnesota Cooperative Park Studies Unit to undertake a visitor survey that currently is scheduled for completion in late 2001.

Wilson's Creek National Battlefield received 176,036 visits in 1998. Annual visitation to the park between 1989 and 1999, however, has fluctuated between 140,000 and 262,000 visits per year. Variation in park visitation is probably due to variations in weather patterns and shifts in the local and national economy.

Park visitation is highest during May and June and lowest in November and December, although visitation on pleasant

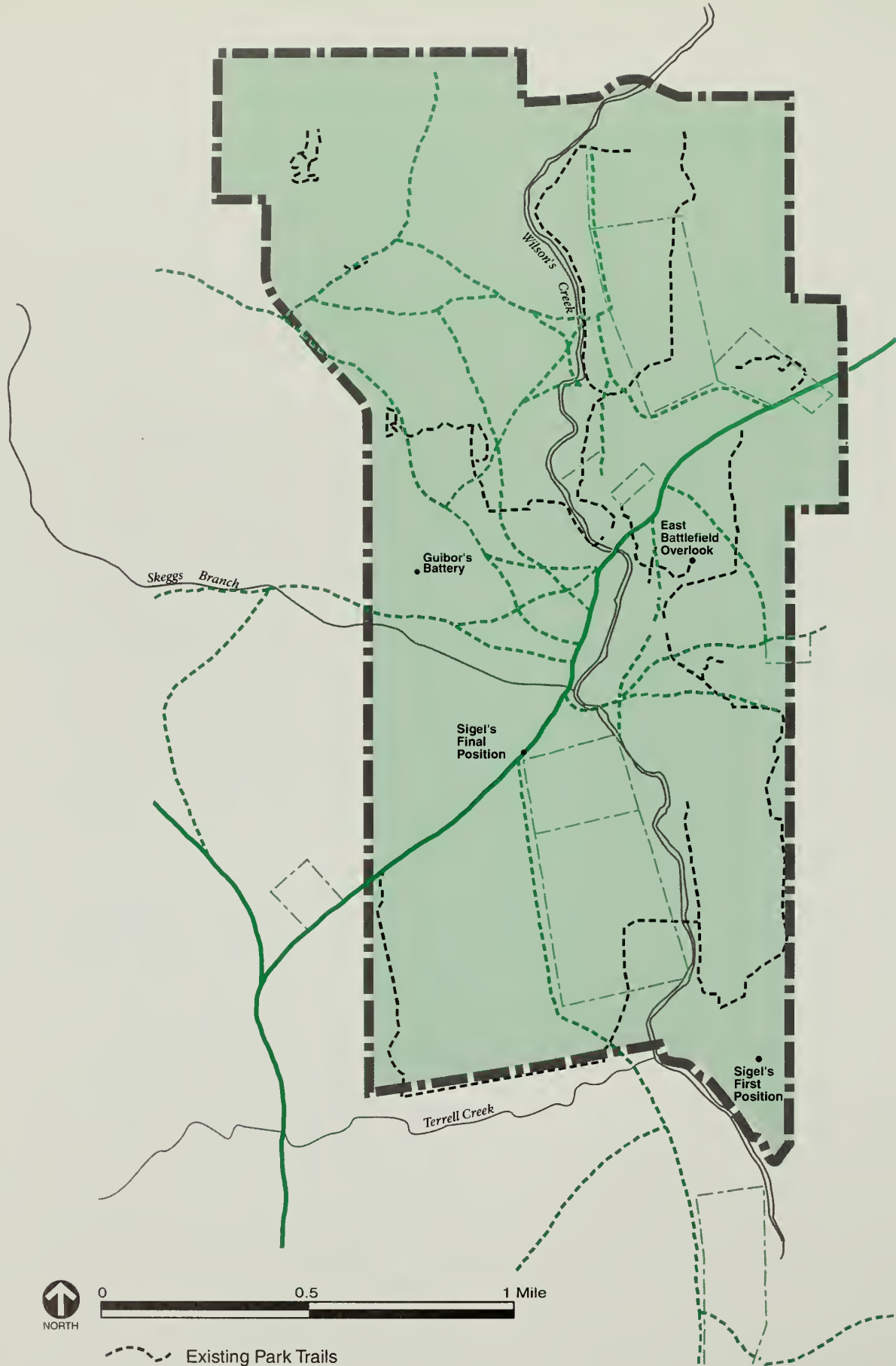
February weekends can surpass visitation on weekends in June, as visitation is highly dependent on weather conditions. Based on staff observations, the average length of stay for visitors is approximately one to three hours and approximately half of the visitors are repeat visitors. Half of the visitors are from the Springfield metropolitan area and surrounding counties.

The most popular visitor activities at Wilson's Creek National Battlefield are 1) driving the tour-road loop, 2) viewing exhibits at the visitor center, 3) viewing the battle map, 4) viewing the film, and 5) shopping in the museum bookstore. Wilson's Creek National Battlefield also provides open space for the Springfield metropolitan area where many local residents regularly undertake recreational activities such as horseback riding, bicycling, exercising their pets, jogging, or physical conditioning. Non-local visitors more commonly cited the opportunity to learn about the Battle of Wilson's Creek and the Civil War as their primary reason for visiting.






Currently, the data indicate that recreation use interferes minimally with those visitors who are seeking to appreciate the historic significance of the battlefield. Visitor responses indicate continued support for preservation and commemoration of Wilson's Creek National Battlefield over recreational use. At the present time, however, visitors do not support restricting recreational use.

#### **Visitor Experience and Interpretation**

Many visitors to Wilson's Creek National Battlefield begin their visit at the visitor center located at the road entrance just inside the northwest corner of the park. At the center, visitors can receive an orientation



0 0.5 1 Mile

-  Existing Park Trails
-  Historic Park Trails and Traces
-  Historic Wire Road
-  Historic Fence Line
-  Park Boundary

## Historic and Existing Trails

General Management Plan  
Wilson's Creek National Battlefield  
United States Department of the Interior • National Park Service  
DSC • 410 • 20019 • OCT 2001

House (1852), and the McElhaney Farm complex (1911). The CLR recommends that the National Register nomination be revised to include extant areas surrounding the park.

### **Archival/Museum Collections**

The park's large archival and materials collection includes over 4,400 volumes and extensive primary documentation. The museum collection contains approximately 40,000 artifacts related to the battle and the Civil War in the Trans-Mississippi region. These include one-of-a-kind pieces directly related to the battle, such as General Lyon's presentation sword and scabbard, the Lyon bed, and the counterpane used to cover Lyon's dead body.

### **VISITOR EXPERIENCE AND AESTHETIC RESOURCES**

#### **Visitor Use**

Information regarding visitation at Wilson's Creek National Battlefield is limited. Most existing information is based on traffic counter readings and/or staff observations. To supplement that information, as part of the general management planning process, the NPS commissioned the University of Minnesota Cooperative Park Studies Unit to undertake a visitor survey that currently is scheduled for completion in late 2001.

Wilson's Creek National Battlefield received 176,036 visits in 1998. Annual visitation to the park between 1989 and 1999, however, has fluctuated between 140,000 and 262,000 visits per year. Variation in park visitation is probably due to variations in weather patterns and shifts in the local and national economy.

Park visitation is highest during May and June and lowest in November and December, although visitation on pleasant

February weekends can surpass visitation on weekends in June, as visitation is highly dependent on weather conditions. Based on staff observations, the average length of stay for visitors is approximately one to three hours and approximately half of the visitors are repeat visitors. Half of the visitors are from the Springfield metropolitan area and surrounding counties.

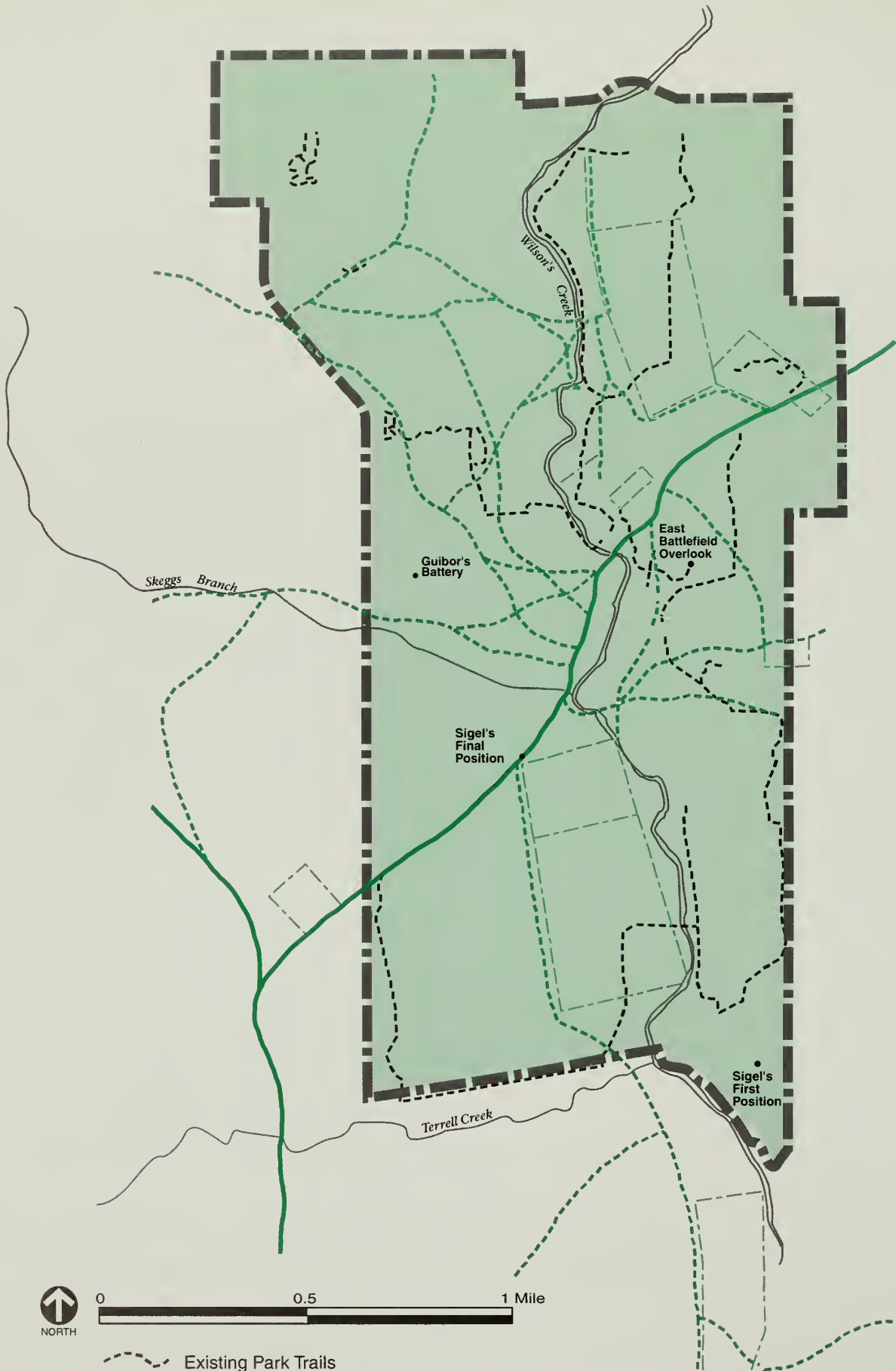
The most popular visitor activities at Wilson's Creek National Battlefield are 1) driving the tour-road loop, 2) viewing exhibits at the visitor center, 3) viewing the battle map, 4) viewing the film, and 5) shopping in the museum bookstore. Wilson's Creek National Battlefield also provides open space for the Springfield metropolitan area where many local residents regularly undertake recreational activities such as horseback riding, bicycling, exercising their pets, jogging, or physical conditioning. Non-local visitors more commonly cited the opportunity to learn about the Battle of Wilson's Creek and the Civil War as their primary reason for visiting.

Currently, the data indicate that recreation use interferes minimally with those visitors who are seeking to appreciate the historic significance of the battlefield. Visitor responses indicate continued support for preservation and commemoration of Wilson's Creek National Battlefield over recreational use. At the present time, however, visitors do not support restricting recreational use.

#### **Visitor Experience and Interpretation**

Many visitors to Wilson's Creek National Battlefield begin their visit at the visitor center located at the road entrance just inside the northwest corner of the park. At the center, visitors can receive an orientation





- Existing Park Trails
- Historic Park Trails and Traces
- Historic Wire Road
- Historic Fence Line
- Park Boundary

## Historic and Existing Trails

General Management Plan  
 Wilson's Creek National Battlefield  
 United States Department of the Interior • National Park Service  
 DSC • 410 • 20019 • OCT 2001

to the park, talk with a park representative, buy materials at the cooperating association sales area, and view exhibits about the battle. A 13-minute video, which is available for viewing at the visitor center, presents the battle's historical background. In addition, a six-minute program conducted on a fiber-optically-lighted map illustrates the course of the battle. Approximately 50 percent of visitors to the park used the visitor center to view the video, exhibits, or fiber-optic battle map. The visitor center is accessible by wheelchair from the parking lot.

An excellent Civil War research library in the visitor center is open to visitors and researchers on an advanced reservation basis, although only a small percentage of visitors use the library. The research library does not maintain open stock or permit visitors to check out material.

Living history programs depicting Civil War soldier life are presented and guided tours of Bloody Hill are provided on weekends during the summer. In addition, the park presents several special events throughout the year, including a moonlight tour and anniversary celebration in August, artillery and musket-firing demonstrations in the summer, and several genealogical programs.

Repeat visitors and recreational users are less likely to use visitor center facilities than first-time visitors, except perhaps for restrooms. Repeat visitors typically begin their park experience by proceeding directly to the tour-road loop, while recreational users often park in the visitor center's parking lot from which they begin jogging or bicycling. Equestrian users also generally park in the visitor center's parking lot or in other areas of the park, including the overflow lot and along the tour-road loop. A seven-mile trail system for horseback riding and hiking is accessible from the tour-road

loop. Although highways and roads surround all sides of the park, traffic noise in most places is typically unobtrusive. However, traffic noise at Bloody Hill, adjacent to County Road ZZ, is fairly audible.

The 4.9-mile paved tour-road loop, with eight interpretive stops at significant battle points, provides a self-guided automobile tour of the battlefield. The tour-road loop receives considerable use by bicyclists, joggers, and walkers. Although bicyclists, pedestrians, and motorized vehicles often use the tour-road loop at the same time, there is a specific lane designated for bicycle use that also may be used by pedestrians.

In addition to the tour-road loop, there are five walking trails (varying in length from one-quarter to three-quarters of a mile) that are accessible to visitors from the tour-road loop and provide access to additional sites related to the battle. For example, one trail leads to the Ray House, which is an historic house on the northeastern corner of the park that was built before the battle. The Ray House served as a temporary field hospital for Confederate soldiers following the battle and the body of General Nathaniel Lyon was taken here after he was killed in battle—the bed on which the general's body was placed remains on exhibit in one of the house's rooms. The Ray House is closed during the off-season but open daily during the summer; even during the off-season, however, tourists can learn about the battle by peering through windows and reading wayside exhibits. Although interpretive trails off the tour-road loop are primitive and not designed for wheelchair use, the Ray House and interpretive stops along the tour-road loop are accessible by wheelchair.

## Visual and Scenic Resources

While the battlefield landscape has undergone alteration (see the discussion under “Special Status Species” in the Affected Environment chapter), modern-day intrusions on the historical scene are minimal. Approximately 250 acres of the park have been restored to 1861 vegetative conditions.

## NATURAL RESOURCES

Wilson’s Creek National Battlefield is located in the northern portion of Missouri’s Ozark Mountain Plateau. Wilson’s Creek National Battlefield averages 40 inches of annual precipitation, most of which is received during the park’s wet season from March through September. Summers are long, warm, and humid, and winters are mild to moderate. Rolling hills, hollows, and the valley of Wilson’s Creek define the park’s landscape, which has a lower elevation of 1,050 feet and a maximum elevation of approximately 1,250 feet. Although much of the landscape was cultivated at the time of the battle, uncultivated hillsides supported oak savanna (Missouri Department of Conservation 1986). Since 1861, the park landscape has changed drastically and currently is dominated by second-growth forest, previously cultivated fields that are transitioning to woodland, restored prairie, and limestone glades. Although dense forest and uncultivated prairie were perhaps uncommon at the site in 1861, limestone glades and mature woodlands were present and reflect a component of the historical battlefield landscape.

### Soil

Primary soils at the park are deep, stony, and chert silt loam to shallow soils (9 to 20 inches in depth) over fractured limestone that have been formed by weathering of

underlying parent materials, including limestone, dolomite, sandstone, and shale (NPS 1988). In addition, alluvial soils are present along Wilson’s Creek and its tributaries. Limestone glades with shallow, rocky soils are scattered throughout the park and support vegetation different from other areas in the park, including several species of rare and protected plants.

### Water Quality

Wilson’s Creek, with its watershed located predominantly outside of the park, is the primary aquatic feature at the battlefield. The creek flows south-southwest from the city of Springfield and bisects the park from north to south for about three miles before reaching its confluence with the James River about one mile south of the park. Skeggs Branch, a small tributary of Wilson’s Creek, flows east and joins Wilson’s Creek in the west-central portion of the park. McElhaney Branch also flows into Wilson’s Creek and forms part of the park’s southern boundary. Wilson’s Creek National Battlefield also contains numerous springs and sinkholes.

Wilson’s Creek is heavily influenced by the permitted discharge of treated sewage effluent from the city of Springfield (population 150,600), which has a permit to discharge 42.5 million gallons of treated sewage effluent each day. During low-flow periods an estimated 80 percent of the water flowing through Wilson’s Creek National Battlefield is treated sewage effluent.

The city of Springfield has worked hard to provide adequate treatment facilities for this rapidly growing area. The water pollution problems caused by inadequate treatment of organic materials in the 1970s and early 1980s have largely been eliminated. Fecal coliform bacteria levels are usually within limits within the park and noxious odors are no longer a source of major complaints by



park visitors. The city is continuing to improve its wastewater facilities with the recent installation of phosphorus removal equipment. The threat of raw sewage spills caused by infrastructure failure, however, remains. In the summer of 1996, a sewage spill into Wilson's Creek killed fish within the park. Additionally, in the summer of 2000, a 36-inch sewer line main deteriorated causing a major spill that required the closing of horse trails within the park boundary, but resulted in no visible adverse effect on aquatic life.

It is difficult for the NPS to manage water quality at the Battlefield due to the minor portion of the watershed within park boundaries and prevalent upstream effects on water quality in the creek.

## Vegetation

Ecologically, the park is located at the far-western edge of the eastern broadleaf forest province near the edge of the prairie parkland province (Bailey 1995). Historical documentation describes much of the park landscape as savanna (Missouri Department of Conservation 1986). Savanna is a fire-dependent environment that supports an understory of herbaceous, prairie species and an overstory of scattered trees. At the time of the battle, oaks were the dominant trees in the park area. In uncultivated areas, blackjack oak dominated the uplands, while other species of oaks were present in smaller numbers. Black oak, white oak, and post oak were dominant overstory species in the draws and bottoms.

Although native plants were present in the area in 1861, much of the landscape supported agricultural fields prior to the Civil War. After the war, agricultural use of the land intensified with additional fields plowed and grazed. In addition, as agriculture expanded in the late 1800s and

early 1900s, suppression of fires increased. The result of fire-suppression tactics, which decreased the frequency and extent of fire, was a gradual succession of uncultivated fields to thick, second-growth forests.

Vegetative communities at Wilson's Creek National Battlefield currently include a mosaic of mature forest, riparian woodland, prairie, and cultivated hay fields. Each community type is present in various densities and successional stages indicative of changes in land-use patterns and/or fire suppression. For instance, some areas support high densities of red cedar that indicate succession from open fields or oak woodlands that have been affected by fire suppression activities. Some woodland areas were cleared prior to establishment of the battlefield and are populated by pasture or exotic grasses. In all communities, interspersed among native plants are non-native, invasive species that continue to compete with native species for land and resources. Exotic species of particular concern within the park include non-native bromes (e.g., soft chess, downy brome, and barren brome), Johnsongrass (*Sorghum halipense*), multiflora rose (*Rosa multiflora*), musk thistle (*Carduus nutans*), and Chinese bushclover (*Sericea lespedeza*). Invasive trees of concern include Osage orange (*Maclura pomifera*) and honey locust (*Gleditsia triacanthos*). Non-native plants currently inhabit dense patches on about 500 acres of parkland and pose a major management concern for park staff.

A restoration plan was developed by the Missouri Department of Conservation in 1986 to reduce the influence of non-native species and improve the quality of native plant communities at the battlefield (Missouri Department of Conservation 1986). The plan that was implemented by the park in 1987 to restore the landscape to

1861 conditions includes restoration and maintenance of oak savanna on hillsides and creation of native prairie communities in areas that became pastures and agricultural fields in the years after the battle. As a result of implementing the restoration plan, which includes an annual prescribed burn of approximately 300 acres of parkland, native species and historical plant communities are gradually increasing their range within the park.

## **Wildlife**

Increasing urban and suburban development in the Springfield-Battlefield-Republic area has diminished the extent of wildlife habitat in the region. As a result, the importance of Wilson's Creek National Battlefield as open space and wildlife habitat has increased in recent years. Wildlife at the park is dominated by common species adapted to human disturbance, including white-tailed deer, cottontail rabbit, squirrel, coyote, bobcat, fox, skunk, opossum, woodchuck, beaver, muskrat, mice, and bobwhite quail. In addition, a variety of common songbirds and raptors, primarily associated with woodland and woodland margins, are found at the park. Although the fragmented nature of wildlife habitat at and adjacent to the park restricts the number and diversity of species inhabiting the area, the park nevertheless provides important nesting and rearing habitat for many species, including mammals, birds, and amphibians.

## **Special Status Species**

According to information received from the U.S. Fish and Wildlife Service (Appendix 1) and the Missouri Department of Conservation (Appendix 2), two federally listed species and several species of special concern to the State of Missouri (state) have been documented at Wilson's Creek National Battlefield.

The Missouri bladderpod (*Lesquerella filiformis*) is listed as endangered by both the federal and state governments. In addition, the state considers five additional plants at the park to be imperiled or critically imperiled, including greenthread (*Thelesperma filifolium* var. *filifolium*), buffalograss (*Buchloe dactyloides*), blue gramma grass (*Bouteloua gracilis*), royal catchfly (*Silene regia*), and false gaura (*Stenosiphon linifolius*) (Missouri Department of Conservation 2000). Except for royal catchfly and false gaura, these plants are found on or adjacent to limestone glades. Royal catchfly inhabits transition zones in savanna habitat between open fields and woodlands. False gaura occurs along the tour-road loop near the southern bridge over Wilson's Creek and may have been brought into the park as part of a wildflower seed mix (Missouri Department of Conservation 2000).

In addition to plants, the federally and state endangered gray bat (*Myotis grisescens*) has been observed in McElhaney Branch Cave near Wilson's Creek east of the visitor center. Gray bats have a limited geographic range in the southeastern United States where they generally inhabit pits and caves in limestone karst regions characterized by sinks, ridges, and caverns (USFWS 1999). The gray bat was last documented in the park in 1996. The grotto salamander (*Typhlotriton spelaeus*), a species of concern to the state, also was documented in McElhaney Branch Cave during surveys conducted in 1985 (Missouri Department of Conservation 2000).

## **SOCIAL AND ECONOMIC ENVIRONMENT**

The city of Springfield began as a settlement of three families in 1830 and was eventually laid out on 50 acres of donated land in 1835. The city grew in importance when it was

included as a stop on the Butterfield Stage Line's Overland Mail route from Tipton, Missouri to San Francisco, California. During the Civil War, the residents of southwestern Missouri were divided in their sympathies to the North and South, and three major battles occurred in the Springfield area: The Battle of Wilson's Creek – August 10, 1861; the first Battle of Springfield or what became known as Zagoni's Charge – October 25, 1861; and the Second Battle of Springfield – January 8, 1863, that was part of Marmaduke's 1863 Raid.

Rail service arrived in Springfield in 1870, contributing to the town's urban evolution. Springfield, which now encompasses 72 square miles and supports 150,600 residents, is the third-largest city in Missouri and the center of one of the fastest-growing regions in the state. Greene County, within which Springfield resides, covers 675 square miles and is home to 223,345 people. Springfield is the county seat of Greene County and the regional center of southwest Missouri. Interstate Highway 44, U.S. Highways 60 and 160, and Missouri State Highway 13 link the city with an extended regional population of 480,000 people located within a 40-mile radius of Springfield. Since World War II, the city's industry has become increasingly diversified with major economic activities related to industry, retail sales, public service, institutions, and tourism.

The populations of Springfield and Greene County grew steadily over the 25-year period between 1970 and 1995, at an average rate of about 1 percent per year. A similar rate of growth is forecast for the period between 2000 and 2020. The population of Greene County is expected to increase by 36 percent to about 285,000 by the year 2020. During the same period, the population of the Springfield urban area is

expected to increase by 39 percent to about 250,000. In addition, the total amount of land dedicated to urban use would increase by 19,600 acres, or 38 percent, by the year 2020.

Agriculture traditionally has predominated in the area surrounding Springfield. Recent growth in the Springfield metropolitan area, however, has changed the character of land-use patterns in the suburban areas of Springfield, Battlefield, and Republic. Large agricultural tracts increasingly are being subdivided into 10-acre residential home sites. As a result, the land area of Springfield has grown significantly. Whereas Wilson's Creek National Battlefield was 10 miles from Springfield city limits in 1961, metropolitan Springfield has now moved as close as five miles from the park.

This changing land-use pattern is visible and audible from within the park boundaries. For instance, transportation improvements to serve this growing suburban population are bringing higher traffic volumes and associated noise to County Road ZZ and Highway 182, which respectively, border the western and northern boundaries of the park.

## **Recreation and Leisure**

The city of Springfield and the surrounding area are home to a variety of cultural, recreational, and historic sites and activities. The area's cultural and entertainment sites include the Springfield Art Museum, the Landers Theatre, the Discovery Center (a hands-on museum), the Juanita K. Hammons Hall for the Performing Arts (home to the Springfield Symphony Orchestra), and Bass Pro Shops Outdoor World Showroom and Fish and Wildlife Museum. In addition to Wilson's Creek National Battlefield, the area's historic sites include General Sweeney's Museum of Civil War History, the History Museum for Springfield/Greene



County, Gray/Campbell Farmstead, the Commercial Street Historic District, the Frisco Railroad Museum, and the Air and Military Museum.

Springfield and the surrounding region offers a range of recreational activities, including collegiate and professional sporting events, as well as hiking on the Ozark Greenways, camping, and eight golf courses. The completion of the South Creek/Wilson's Creek Greenway would provide additional recreational opportunities. In addition to General Sweeney's Museum of Civil War History, other regional sites such as Pea Ridge National Military Park, Fort Scott National Historic Site, and Prairie Grove Battlefield State

Park, would provide educational and interpretive opportunities linked to Wilson's Creek.

## **PARK ACCESS AND TRANSPORTATION**

The park's 4.9-mile, paved tour-road loop and eight interpretive stops provide visitors the opportunity to take a self-guided auto tour of the park. In addition, five hiking trails link the tour-road loop to key battle-related sites, including the Ray House and other historical features that help illustrate the landscape at the time of the battle. Horseback and hiking trails provide additional opportunities for recreational use.

## Environmental Consequences





## ENVIRONMENTAL CONSEQUENCES

### INTRODUCTION

The National Environmental Policy Act (NEPA) requires that environmental documents disclose the environmental impacts of all the reasonable alternatives and any adverse environmental effects that cannot be avoided should the preferred alternative be implemented. This chapter analyzes the environmental impacts of the three management alternatives, including the no-action alternative, on cultural resources, visitor experience and aesthetic resources, natural resources, social and economic environment, and park access and transportation. These analyses provide the basis for comparing the effects of the alternatives.

### METHODOLOGY

The planning team based the analysis of environmental consequences on a review of existing literature and park studies, as well as information provided by NPS staff and subject matter experts within and outside of the NPS. NPS personnel identified impacts by comparing the potential effects of the evaluated alternatives to existing conditions as described previously under chapter 3, "Affected Environment." In addition, as described in the "Mitigation" section of chapter 4, each alternative would incorporate mitigation measures, as appropriate, to minimize or avoid impacts.

In accordance with NEPA, evaluation of environmental impacts requires consideration of the intensity, duration, and cumulative nature of impacts, as well as a description of measures to mitigate for impacts.

### Intensity

Intensity refers to the degree or severity of an impact. Impacts are described as adverse or beneficial and levels of intensity for each impact topic were determined using the definitions presented in the following sections.

#### Cultural Resources

The intensity of impacts on cultural resources was determined using the following definitions:

*negligible* - the impact is barely perceptible and not measurable and is confined to a small area or a single contributing element of a historic structure, site, or archeological resource

*minor* - the impact is perceptible and measurable and is confined to a small area or a single contributing element of a historic structure, site, or archeological resource

*moderate* - the impact is sufficient to cause a change in the character-defining features of a resource and generally involves a single or small group of contributing elements of a historic structure, site, or archeological resource

*major* - the impact results in substantial and highly noticeable change in character-defining features of a resource and involves a large group of contributing elements and/or an individually significant historic structure, site, or archeological resource

### **Visitor Experience and Aesthetic Resources**

The intensity of impacts on visitor experience and aesthetic resources was determined using the following definitions:

*negligible* - the impact would not be detectable by visitors and would have no discernible effect on their experience

*minor* - the impact is slightly detectable by visitors but would not affect overall visitor use and/or the visitor experience

*moderate* - the impact is clearly detectable by visitors and could have an appreciable effect on the visitor experience

*major* - the impact would have a substantial, highly noticeable influence on the visitor experience and could permanently alter access, use, and availability of various aspects of the visitor experience

### **Natural Resources**

The intensity of impacts on natural resources was determined using the following definitions:

*negligible* - the impact is localized and at the lowest levels of detection

*minor* - the impact is localized and slightly detectable but would not affect overall structure of any natural community

*moderate* - the impact is clearly detectable and could have an appreciable effect on individual species, communities, and/or natural processes

*major* - the impact is highly noticeable, and would have a substantial influence on natural resources, including impacts on individuals or groups of species, communities, and/or natural processes.

### **Social and Economic Environment**

The intensity of impacts on the social and economic environment was determined using the following definitions:

*negligible* - the impact is barely detectable and would have no discernible effect on the socioeconomic environment

*minor* - the impact is slightly detectable but would not affect the overall socioeconomic environment

*moderate* - the impact is clearly detectable and could have an appreciable effect on the socioeconomic environment

*major* - the impact would have a substantial, highly noticeable, potentially permanent influence on the socioeconomic environment

### **Park Access and Transportation**

The intensity of impacts on park operations, facilities, and partnerships was determined using the following definitions:

*negligible* - the impact is barely detectable and would have no discernible effect on park operations and facilities

*minor* - the impact is slightly detectable but would not affect the park's overall ability to provide services and maintain facilities

*moderate* - the impact is clearly detectable and could have an appreciable effect on park operations and facilities

*major* - the impact would have a substantial, highly noticeable influence on park operations and facilities and could reduce the park's ability to provide adequate services and/or maintain facilities

## Duration

Duration refers to the time period during which the effects of an impact persist. For impact topics evaluated in this document, the duration of impacts across all categories were determined using the following definitions:

*short term* - the impact lasts less than one year

*long term* - the impact lasts one year or longer

## Cumulative Impacts

Cumulative impacts are impacts on the environment that result from the incremental (i.e., additive) impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what entity (federal or non-federal) undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place during a period of time.

Cumulative impacts analyzed in this document consider the incremental effects of the no-action alternative and each of the action alternatives in conjunction with past, current, and future actions at Wilson's Creek National Battlefield. These actions include the following planned or ongoing activities:

- implementation of the Springfield/Greene County Vision 20/20 Comprehensive Plan, which identifies Wilson's Creek National Battlefield as a major regional recreational and cultural resource (Springfield 1998). An important component of this plan is development of the South Creek/Wilson's Creek Greenway, which would link with the James River Greenway to form a loop connecting the park with the city of Springfield.
- ongoing interpretive and educational efforts at Pea Ridge National Military Park (Arkansas); Fort Scott National Historic Site (Kansas); General Sweeney's Museum of Civil War History (Missouri); the History Museum of Springfield/Greene County; Mine Creek State Historic Site (Kansas); and Prairie Grove Battlefield State Park (Arkansas). All of these sites are linked thematically with Wilson's Creek National Battlefield.
- development of the new visitor center and research library addition in the northwest corner of the park
- construction of the U.S. Highway 60 Bypass. Highway 60 currently passes directly through the city of Republic. The bypass could reroute the highway so that it passes nearer to Wilson's Creek National Battlefield.
- potential widening of County Roads M and MM, which are located north of Wilson's Creek National Battlefield and connect Interstate 44 with County Road ZZ. County Road ZZ runs north-south and delineates most of the western edge of the park.



- increased conversion of agricultural land to residential development in areas surrounding the cities of Springfield, Republic, and Battlefield. Current estimates predict that nearly 20,000 additional acres of land would be developed in the area by the year 2020 (Springfield 1997).
- completion of the "Draft Wilson's Creek Transportation Study," which describes potential solutions to transportation-related issues within and outside the park

## POTENTIAL FOR IMPAIRMENT OF PARK RESOURCES AND VALUES

The NPS has determined that implementation of any of the alternatives in the GMP/EIS would not constitute an impairment<sup>1</sup> to the resources and values of Wilson's Creek National Battlefield. This conclusion is based on a thorough analysis of the environmental impacts described in the environmental impact statement.

In determining whether impairment may occur, park managers consider the duration, severity, and magnitude of the impact; the resources and values affected; and direct, indirect, and cumulative effects of the action. According to NPS policy, "An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is: a)

necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; b) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or c) identified as a goal in the park's general management plan or other relevant National Park Service planning documents."

This policy does not prohibit impacts to park resources and values. The NPS has the discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, so long as the impacts do not constitute impairment. Moreover, an impact is less likely to constitute impairment if it is an unavoidable result of an action necessary to preserve or restore the integrity of park resources or values.

## MITIGATION

Under all alternatives, NPS staff would mitigate impacts arising from increases in visitation, development of additional access and trails, construction for parking, and increased suburban development and traffic outside the park boundaries. The park currently is completing a transportation study focusing on internal park issues, as well as the growing regional highway infrastructure. The study would recommend options to manage increasing numbers and diversity of users and mitigate, as necessary, impacts related to recreational use conflicts.

The park staff would consult with the Missouri State Historic Preservation Officer on management strategies for historic structures to minimize adverse impacts resulting from visitor use. All mitigation measures would be undertaken in consultation with the Missouri State Historic Preservation Officer and the Advisory Council on Historic Preservation. The park staff would continue to develop inventories

---

<sup>1</sup> The National Park Service may not allow the impairment of park resources and values unless directly and specifically provided for by legislation or by the proclamation establishing the park. Impairment that is prohibited by the National Park Service Organic Act and the General Authorities Act is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values.

for and oversee research about Wilson's Creek's cultural resources. These resources would be managed according to federal regulations and NPS guidelines.

A number of studies that are underway or have been completed would aid park management and staff in better understanding and managing the park's cultural resources. These studies include the park's 100% archeological survey and the draft cultural landscape report.

Park management would restrict visitors in all instances where such use appears to adversely affect resources or conflicts with the park's purpose and significance. Archeological monitoring and subsurface investigations, where necessary, would be conducted to ensure that development and construction of new facilities does not affect the park's significant archeological resources. Every effort would be made to avoid known archeological sites. Park staff would work with archival professionals from local universities and museums, as necessary, to refine the methods for management and use of the park's archives and collections.

The park staff would use visitor use data and information contained in the "Draft Wilson's Creek Transportation Study" to identify user conflicts and develop strategies to mitigate or eliminate conflicts. These issues could relate to increased visitor use of the park tour-road loop. Other issues may relate to impacts on park access as a result of increased traffic congestion on County Road ZZ. Using information in the draft transportation study, park management would work with the Missouri Department of Transportation to ensure the safety of visitors by improving access from County Road ZZ.

Management of exotic species would be used to restore the park's battlefield landscape to its 1861 condition; this includes the restoration of native plant habitat. Cultivation of native species and the management of exotic species, such as Osage orange, can provide screening from outside visual and auditory intrusions resulting from development outside park boundaries. These measures would both contribute to effective cultural and natural resource preservation and enhance the visitor experience. The data collected in the draft cultural landscape report would provide additional guidance to direct landscape rehabilitation efforts.

NPS staff would work with other land management agencies whenever possible to manage the entire set of resources and ecosystems that encompass and affect Wilson's Creek National Battlefield.

NPS staff would apply ecological principles to ensure that natural resources were maintained and not impaired. The staff would continue to inventory and monitor the park's natural resources to avoid or minimize impacts resulting from future development. They would manage fire and other techniques, such as grazing and mechanical processes, to maintain and/or restore ecosystem integrity and use integrated pest management procedures when necessary to control non-native organisms or other pests. Habitats for threatened and endangered species would also be conserved and restored.

NPS staff would apply mitigation techniques to minimize the impacts of construction and other activities on park resources. Facilities would be built in previously disturbed areas or in carefully selected sites with as small a construction footprint as possible. To prevent soil erosion that degrades water

quality, best management practices such as thorough design analysis, the use of soil retention structures, and prompt revegetation would be applied to all disturbed sites associated with construction activities.

Park managers would continue to regularly update the park's resource management plan to prioritize actions needed to protect, manage, and study park resources. Areas used by visitors would be monitored for signs of native vegetation disturbance, trampling, trail erosion, or the development of social trails.

## **ALTERNATIVE IMPACTS**

### **Alternative A — No Action**

#### **Impacts on Cultural Resources**

***Historic Sites and Structures.*** Under the no-action alternative, gradual increases in visitation and recreational use would lead to increased use of the park's 27 historic sites and structures. Increased use would increase the risk of minor adverse impacts to most resources resulting from increased vandalism and/or loss of historic fabric due to theft or accidental damage. The park would continue to manage visitation at the Ray House by restricting visitors to park ranger-led tours, in order to minimize adverse impacts to this nationally significant structure.

***Cumulative Impacts.*** A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect historic sites and structures in the area of the park. Wilson's Creek was once a thriving agricultural community. The gradual removal and deterioration of buildings and structures throughout the years has eliminated many historic resources related to the battle, as well as resources related to agricultural and urban development in the

area. Historical information concerning certain sites and structures is available through interpretive and educational materials provided by regional Civil War-related sites, including General Sweeney's Museum of Civil War History and the History Museum of Springfield and Greene County.

In addition to past destruction of historic sites and structures, future actions may further degrade or eliminate such resources in the area. For instance, current estimates predict that nearly 20,000 acres of additional land would be converted to urban uses before the year 2020 (Springfield 1997). Many of these acres may support sites and structures important to the history of the Springfield regional area.

The no-action alternative would contribute a negligible, long-term, adverse component to cumulative impacts on historic sites and structures in a regional context.

***Conclusion.*** The no-action alternative would have negligible, short- and long-term, adverse impacts on the park's 27 historic sites and structures due to increased risk of vandalism and accidental damage. This minimal level of impact would not constitute impairment of park resources and values.

***Archeological Resources.*** Under the No-Action Alternative, gradual increases in visitation could increase vandalism, theft, and trampling of archeological resources. In addition, limited rehabilitation of the battlefield could disturb previously undiscovered resources. Educational and interpretive programs informing visitors of resource significance, as well as controlled access to sensitive sites, however, would reduce adverse impacts to archeological resources.



*Cumulative Impacts.* A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect archeological sites in the region of the park. Past actions, including agricultural and urban development, as well as other activities that occurred after the battle, could have obscured belowground resources at and in the vicinity of Wilson's Creek. In addition, construction of roads and structures, including the park tour-road loop, could have affected archeological resources. Information concerning certain archeological resources, however, has been collected and is available through interpretive and educational materials provided by regional museums, including General Sweeney's Museum of Civil War History and the History Museum of Springfield and Greene County.

In addition to past disturbance and destruction of archeological sites, future actions may further degrade or eliminate such resources in the area. Several proposed actions, including construction of the Highway 60 Bypass and widening of several roads in the area, may degrade archeological resources. In addition, general suburban development of an additional 20,000 acres of agricultural land may disturb or destroy archeological artifacts in the region.

The no-action alternative would contribute a minor, long-term, adverse component to cumulative impacts on archeological resources at the park.

*Conclusion.* The no-action alternative would have minor, long-term, adverse impacts on the park's 50 known archeological resources due to increased vandalism, theft, and accidental damage and disturbance during rehabilitation of the battlefield. This low level of impact would not constitute impairment of park resources and values.

*Cultural Landscape.* Under the no-action alternative, limited rehabilitation of the landscape to its 1861 appearance would continue. Dense forests with shrubby understory would be thinned and open fields and savanna habitat would be restored.

*Cumulative Impacts.* A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect the cultural landscape at and adjacent to the park. The park encompasses approximately 75 percent of the battlefield area that actually was used during the Battle of Wilson's Creek. Since the time of the battle, most areas inside and outside of the present park boundary were developed for intensive agricultural use. Developed agriculture remains common in most areas adjacent to the park, including areas on which the battle was fought.

Although most acreage within the park's boundaries was also intensively farmed until recent decades (since the park's establishment in 1960), much of the cultural landscape within the park has converted to dense forest with shrubby undergrowth. In addition, several species of exotic, invasive plants have become pervasively established in the park. In essence, the entire landscape as it existed at the time of the battle (i.e., open fields and oak savanna) has been altered to such a degree that little of the historical setting remains. Recent efforts, however, have begun to gradually restore the landscape to its 1861 condition. In addition to changes in vegetation, the gradual deterioration and removal of buildings has altered the area's cultural landscape.

Future actions would also affect the landscape. As residential and other urban development continues in the area, including construction and modification of

transportation corridors, modern components increasingly would be visible from points within the park and would contribute to visual degradation of the landscape.

The no-action alternative would contribute a minor, short-term and long-term, beneficial component to cumulative impacts on the cultural landscape at the park.

*Conclusion.* The no-action alternative would have minor, long-term, beneficial impact on the park's cultural landscape due to the continued, gradual rehabilitation of the landscape to 1861 conditions. These beneficial impacts would not constitute impairment of the park's resources and values.

*Archival/Museum Collections.* Under the no-action alternative, increased visitation could result in a small increase in the number of researchers using the park archives. Storage for the research library and museum collections is at capacity. The park's archival collections currently are not adequately stored and protected.

*Cumulative Impacts.* Several museum and historical sites in the region of the park have accumulated archival collections containing information relevant to historical events, including the Civil War. These facilities include several national and state battlefields and historic sites (e.g., Fort Scott National Historic Site in Kansas and Prairie Grove Battlefield State Park in Arkansas) and museums (e.g., General Sweeney's Museum of Civil War History in Missouri and the History Museum of Springfield and Greene County).

In addition to construction and maintenance of the facilities listed above, construction of a new visitor center and research library

addition at the park would provide additional storage space and information concerning historic events at and in the vicinity of Wilson's Creek National Battlefield.

The no-action alternative would contribute a negligible, long-term, beneficial component to cumulative impacts on archival collections in the region.

*Conclusion.* The no-action alternative would have a minor, short-term and long-term, beneficial impact on the park's archival collection due to increased protection of archival materials. These beneficial impacts would not constitute impairment of park resources and values.

### **Impacts on Visitor Experience and Aesthetic Resources**

*Visitor Use.* Under the no-action alternative, visitation would increase primarily in accordance with regional population growth. Although recent visitation data indicate Wilson's Creek National Battlefield is currently operated below its carrying capacity, population growth in the region may increase use beyond that capacity, as recreational users visit in order to enjoy horseback riding, cycling, and jogging.

As visitation increases, existing parking lots at the battlefield would fill to capacity more frequently. Inadequate parking would increase the frequency with which visitors park in undesignated roadside areas and eventually would restrict visitor use of park facilities, including the visitor center. When the parking lot at the visitor center fills beyond capacity, visitor use would be restricted to a "first come, first served" basis. Such restrictions would limit educational and recreational opportunities and may conflict with the park's establishing legislation, which provided for "roads, trails,

markers, buildings, and other improvements” necessary to care for and accommodate visitors.

***Cumulative Impacts.*** Although the no-action alternative would not contribute to increased visitor use, a variety of past, present, and reasonably foreseeable actions have affected and would continue to affect visitor use at the park. Prior to its establishment in 1960, Wilson’s Creek National Battlefield was privately owned and visitation was restricted accordingly. Following establishment of the park, visitation increased gradually to a high of 262,000 visitors in 1996. Construction of the visitor center and tour-road loop increased the attractiveness of Wilson’s Creek National Battlefield as a tourist and recreational destination, and improvements to adjacent roads, including Road ZZ and Route 182, increased accessibility to the park and surrounding areas.

Current estimates predict the population in the region of the park to increase by approximately 40 percent (or nearly 65,000 people) between the years 2000 and 2020. As the regional population grows, visitor use of the park would increase and visitation also may grow due to increased interpretive and educational programs conducted by nearby organizations, such as the General Sweeney’s Museum of Civil War History, that increase awareness of the region’s Civil War heritage. In addition, proposed transportation and recreational improvements, including widening of County Roads M and MM, construction of the Highway 60 Bypass, and implementation of the Springfield/Greene County Comprehensive Plan, would contribute to increased visitor use of the park and surrounding areas.

***Conclusion.*** The no-action alternative would have a minor to moderate, long-term,

adverse impact on visitor use at the park. Although overall visitation is expected to increase under this alternative, limited parking would restrict visitor use at some facilities such as the visitor center. While this relatively low level of impact would affect visitors’ ability to use the park, it would not constitute impairment of park resources and values.

***Visitor Experience and Interpretation.***

Under the no-action alternative, the NPS would continue to provide interpretive and recreational opportunities to park visitors through established services and facilities. Although interpretive programs would be updated to incorporate emergent information, no additional trails, interpretive kiosks, or parking facilities would be developed. Park visitors would continue to obtain historical information at designated stops along the tour-road loop. Conflicts between recreational and educational users, however, could increase as parking facilities are more frequently filled beyond capacity. For instance, roadside pullouts intended to provide temporary parking at interpretive sites may be used more frequently for long-term parking by recreational users, which would limit their interpretive use and restrict a primary purpose of the park (i.e., commemoration of the Battle of Wilson’s Creek).

***Cumulative Impacts.*** A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect visitor experience and interpretation at the park. Since the park’s establishment, activities and interpretive programs at Wilson’s Creek National Battlefield have increased gradually to accommodate the various interests of park visitors.

Although much of the site was actively farmed when the park was established in



1960, many acres of the battlefield have converted to brushy woodland or second-growth forest. Although recent actions by NPS staff have begun restoring areas of the park to reflect 1861 conditions, patches of woodland remain at the site and provide outdoor experiences that are increasingly uncommon in the region due to agricultural development and urban expansion. Such experiences include walks along a forested stream corridor and the feeling of history and isolation associated with open space at the park.

As the regional population grows, so would pressure to widen highways, increase infrastructure, and develop land around the park. Current proposals include widening of several roads in the area and construction of the Highway 60 Bypass. In addition, current estimates predict the conversion of approximately 20,000 acres of agricultural land to residential development in the Springfield area between the years 2000 and 2020. Some, but not all, of this development undoubtedly would be undertaken near the park. As a result, visual and auditory intrusions would decrease the sense of historical context and isolation currently available to park visitors. In fact, automotive traffic along Road ZZ and Highway 182 is increasingly audible from areas within the park. In addition, as visitation to the park increases with regional population growth, parking conflicts and more frequent encounters between visitors would degrade the quality of visitor experiences and may decrease accessibility to interpretive materials.

The no-action alternative would contribute a moderate, long-term, adverse component to cumulative impacts on visitor experience and interpretation in the region by providing inadequate parking facilities and interpretive access.

**Conclusion.** The no-action alternative would have a moderate, long-term, adverse effect on visitor experience and interpretation at the park. Although visitor-use conflicts are currently rare, as visitation increases while available parking remains constant, such conflicts could increase in frequency and may interfere with the park's ability to provide interpretive information. This level of impact could constitute impairment of park resources and values.

**Visual and Scenic Resources.** Under the no-action alternative, increased visitation would affect the quality of visual resources within the park. With increased visitation, the probability of seeing numerous vehicles in the park would increase, as would the probability of encountering multiple joggers, equestrians, and bicyclists. In addition, when visitation exceeds the parking capacity of the visitor center and overflow lots, vehicles could be distributed and visible along any section of the tour-road loop. As visitors and vehicles become a more prominent and widely distributed component of the landscape, their visual impact would conflict increasingly with the historical context of the park and intrude upon visitors' opportunities to envision the site as it existed in 1861.

**Cumulative Impacts.** A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect scenic resources at and adjacent to the park. Although much of the park and adjacent areas may have been forested prior to clearing for agricultural purposes throughout the 1800s, the area was relatively free of trees for much of the 1800s and 1900s. Historical clearing of trees remains evident on a regional scale, although woodland forests have colonized some fallow fields.

In general, historical actions in the Springfield region have converted the landscape from woodlands and prairies to developed agriculture. Despite this change, the area retained a rustic, rural nature that afforded high-quality views of scenic resources. As the regional population grows, however, residential development in agricultural areas would become more visually prominent from areas within the park. As previously described, regional planners predict that approximately 20,000 acres of undeveloped land in the Springfield area would be converted to housing for the nearly 65,000 people expected to move into the area between 2000 and 2020. Some, but not all, of this development undoubtedly would be visible from the park and would intrude upon scenic views and historical context.

The no-action alternative would contribute a minor, long-term, adverse component to cumulative impacts on scenic resources in the region by increasing the presence of dispersed visual intrusions (e.g., cars and buses) within the park.

**Conclusion.** The no-action alternative would have a minor, long-term, adverse effect on visual and scenic resources at the park. Unplanned distribution and management of vehicles and visitors within the park would intrude upon scenic views and degrade the visual quality of resources within the park. This low level of impact would not constitute impairment of park resources and values.

### **Impacts on Natural Resources**

**Soil.** Under the No-Action Alternative, erosion of soils along unpaved trails, particularly the horse trail, would increase with increased visitation. No additional trails or structures would be constructed. No additional impacts on soil properties would

therefore occur, such as impacts to soil porosity, water infiltration, water-holding capacity, or rates of surface runoff.

**Cumulative Impacts.** A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect soils in the region of Wilson's Creek National Battlefield. Conversion of land for agricultural purposes resulted in extensive soil disturbance and increased soil erosion associated with displacement of historical vegetation by seasonally cultivated crops. In addition to agricultural development, residential development also has affected soils extensively in the region. Since the 1830s, urban development has affected approximately 46,000 acres of land now within the Springfield city limits, resulting in extensive removal, rearrangement, compaction, and paving of soils. Projected growth estimates indicate an additional 20,000 acres of land would be developed in the Springfield region by the year 2020 (Springfield 1998) with impacts on soils that would be expected to affect soil compaction, porosity, and surface-runoff rates. Within the park, construction of the new visitor center and research library addition would affect soils similarly to soils affected by past and expected future development of urban areas in the region.

The no-action alternative would contribute a negligible, long-term, adverse component to cumulative impacts on soils in the region.

**Conclusion.** Increased visitation and recreational use would have a negligible, long-term, adverse impact on trails throughout the park that are located on slightly erodible soils. Although trails would continue to erode slightly, unpaved trails cover only a small fraction of the 1,750-acre park. This minimal level of impact would not constitute impairment of park resources and values.

**Water Quality.** Under the no-action alternative, erosion of soils along unpaved trails, particularly the horse trail, would increase with increased visitation. However, owing to the distance of existing trails from Wilson's Creek and other waterways in the park (typically 50 feet or more), relatively flat topography in the valley bottoms, and dense vegetation along stream corridors, most (if not all) eroded sediments would be trapped before entering watercourses (Wenger 1999). No additional trails or structures would be constructed that might increase erosion or otherwise degrade water quality in the park.

**Cumulative Impacts.** A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect water quality in the region of Wilson's Creek National Battlefield. Major past and current actions that have degraded water quality in the region include agricultural and urban development.

Most of the Wilson's Creek watershed lies outside the boundary of the park in areas that have been intensively cultivated for nearly two centuries. Agricultural runoff from those areas containing fertilizers and pesticides has degraded water quality within Wilson's Creek and the larger James River watershed. Stormwater runoff is associated with urban development in the Springfield metropolitan area. Stormwater runoff transports urban contaminants, including petroleum products and heavy metals, into Wilson's Creek and its tributaries. Another source of past and potential contamination of Wilson's Creek is Springfield's southwest wastewater treatment plant, which is located upstream from the park. Upstream sewage spills have occurred in the past and may occur in the future (NPS 2000). The cumulative effect of these sources of contamination has reduced populations of

aquatic vertebrates and invertebrates and, in some instances, has resulted in fish kills in Wilson's Creek.

The city of Springfield has developed from a small town when it was originally established in the 1830s to an extended metropolitan area that currently encompasses approximately 72 square miles (46,000 acres) and supports a population of 150,600 residents. Adjacent, unincorporated areas support many thousand additional residents. Projected development in the region is likely to increase the volume of stormwater runoff discharged into Wilson's Creek as the population grows by 35 to 40 percent between the years 2000 and 2020.

The no-action alternative would not contribute to cumulative impacts on water quality in the region.

**Conclusion.** The no-action alternative would not affect water quality in the park. Although erosion along trails may increase slightly, the distance of trails from waterways, vegetation, and topography would prevent degradation of water quality. This would not constitute impairment of park resources and values.

**Vegetation.** Under the no-action alternative, implementation of actions identified in the Landscape Restoration Plan would continue a gradual process of restoring the composition and density of woodlands and prairie communities at Wilson's Creek National Battlefield to 1861 conditions.

**Cumulative Impacts.** A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect vegetation in the region of Wilson's Creek National Battlefield. Conversion of land for agricultural purposes has drastically reduced the extent of native vegetation and habitats.



In areas surrounding the park, approximately 90 percent of the land has been cultivated or developed for urban uses. Such development has isolated small patches of vegetation that has been transformed by fire suppression and other factors from savanna woodland dominated by scattered oaks to dense forests dominated by exotic plants, such as Osage orange and honey locust (Missouri Department of Conservation 1986). Narrow corridors along waterways, including Wilson's Creek and Skeggs Branch, continue to support riparian vegetation with a dense, brushy understory. The majority of wetland vegetation in the area, and throughout Missouri, however, has been destroyed by agricultural and urban development (Dahl 1990).

In addition to the 46,000 acres that have been developed since the 1830s as the City of Springfield has grown, an additional 20,000 acres of open space dominated by agriculture and non-native vegetation is expected to be converted to urban uses by the year 2020.

The no-action alternative would contribute a minor to moderate, long-term, beneficial component to cumulative impacts on vegetation by preserving open space and gradually restoring hundreds of acres of historical 1860s vegetation in the Springfield metropolitan area.

***Conclusion.*** The no-action alternative would have a minor to moderate, long-term, beneficial impact on vegetation in the park. The park currently protects one of the largest remnant patches of undeveloped open space in the region and therefore provides an unusual opportunity for restoration and enhancement of native vegetation. The no-action alternative would preserve this open space and gradually enhance hundreds of acres of degraded

woodland and prairie in accordance with the park's Landscape Restoration Plan. This impact would not constitute impairment of park resources and values.

***Wildlife.*** Under the no-action alternative, limited restoration efforts associated with implementation of the Landscape Restoration Plan would continue to gradually improve the quality of wildlife habitat at Wilson's Creek National Battlefield. Gradual restoration of native vegetation and control of exotic species would increase palatable forage available to herbivores such as white-tailed deer, while restoration of woodlands and prairies would benefit additional species, including ground-nesting birds. Increased visitation and traffic, including dispersed parking along the tour-road loop, however, would potentially disrupt wildlife behavior such as courtship and nesting.

***Cumulative Impacts.*** A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect wildlife in the region of Wilson's Creek National Battlefield. Conversion of land for agricultural and residential purposes has drastically reduced the extent of native habitats available for wildlife. Although agricultural development has benefited wildlife in some ways, such as seasonal production of food and maintenance of open space, agriculture also has adversely affected wildlife by disrupting essential behaviors, such as foraging and reproduction. For instance, ground-nesting birds and mammals are particularly sensitive to agricultural activities, such as plowing and harvesting, that disrupt reproductive and rearing activities. Urban and residential development in the Springfield metropolitan area continues to reduce wildlife habitat, including cultivated fields. Other human actions, including hunting and introduction

of domesticated animals, also have affected native wildlife by increasing mortality, competition, and predation.

In addition to past and current actions, future construction and development, such as construction of the Highway 60 Bypass and urban construction of a projected, additional 20,000 acres of open-space by the year 2020, would continue to reduce and fragment remaining wildlife habitat.

The no-action alternative would contribute a minor, long-term, beneficial component to wildlife by preserving open space and gradually controlling exotic plant species and restoring native habitats.

*Conclusion.* The no-action alternative would have a minor, long-term, beneficial impact on wildlife in the park. The park currently protects one of the largest remnant patches of undeveloped open space in the region and therefore provides a land base important for supporting wildlife. The no-action alternative would preserve this open space and gradually enhance hundreds of acres of degraded woodland and prairie. This impact would not constitute impairment of park resources and values.

***Special Status Species.*** Under the no-action alternative, limited efforts to restore the 1861 landscape and control exotic plants would continue, which would improve habitat conditions for rare plants, including the Missouri bladderpod, royal catchfly, green thread, buffalograss, blue gramma grass, and false gaura. Landscape restoration would not affect gray bat or grotto salamander, which live in caves along the bank of Wilson's Creek. Under this alternative, caves would remain off-limits to visitors and cave entrances would be secured to ensure protection.

*Cumulative Impacts.* A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect special status species in the region of Wilson's Creek National Battlefield. Conversion of land for agricultural purposes has reduced the extent of habitat available to special status plants and animals. In areas surrounding the park, approximately 90 percent of undeveloped land is cultivated or recently has been cultivated. In addition, agricultural conversion of native prairies and woodlands has eliminated the majority of wetlands in the area—a habitat essential for supporting aquatic species such as grotto salamander. Since the 1780s, more than 85 percent of historical wetlands in Missouri have been destroyed (Dahl 1990).

In addition to conversion of native habitats for agricultural purposes, in more recent years, large areas of natural and agricultural lands have been developed to provide residential housing. Since Springfield was settled in the 1830s, it has grown in size by approximately 1000 percent, from 50 to approximately 46,000 acres. An additional 20,000 acres is expected to be converted to urban uses by the year 2020 (Springfield 1997).

Furthermore, runoff and pollutants resulting from conversion of native habitats to agriculture and urban development has degraded the quality of water in regional drainages. This degradation has affected aquatic organisms inhabiting and/or dependent on Wilson's Creek, including grotto salamander. The city of Springfield, however, has taken actions recently to improve water quality in Wilson's Creek by controlling discharges into local waterways.

The no-action alternative would contribute a minor, long-term, beneficial component to cumulative impacts on special status species

by preserving habitat and controlling access to caves that support gray bat and grotto salamander.

**Conclusion.** The no-action alternative would have a minor to moderate, long-term, beneficial impact on special status species in the park. The park currently supports some of the largest remaining patches of native habitat in the region, including patches of uncultivated prairie and woodlands and caves along Wilson's Creek that support gray bat and grotto salamander, which would continue to be maintained as undeveloped open space. This impact would not constitute impairment of park resources and values.

### **Impacts on the Social and Economic Environment**

***Recreation and Leisure.*** Under the no-action, Wilson's Creek would accommodate increased visitation and recreational use, thereby enhancing regional recreational opportunities. Current recreational activities at the park, including hiking, jogging, bicycling, and horseback riding, would be maintained. Although no additional trails or equestrian facilities would be constructed, one of the existing lanes along the tour-road loop would remain closed to vehicular traffic and would continue to provide a route for joggers and bicyclists.

***Cumulative Impacts.*** A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect recreation and leisure in the region of the park. The city of Springfield and the surrounding area are home to a variety of cultural, recreational, and historic sites and activities. The area's cultural and entertainment sites include the Springfield Art Museum, the Landers Theatre, the Discovery Center (a hands-on museum), the Juanita K. Hammons Hall for the

Performing Arts (home to the Springfield Symphony Orchestra), and the Bass Pro Shops Outdoor World Showroom and Fish and Wildlife Museum. In addition to Wilson's Creek National Battlefield, the region also supports several other history-oriented sites, including General Sweeney's Museum of Civil War History, the History Museum for Springfield/Greene County, Gray/Campbell Farmstead, the Commercial Street Historic District, the Frisco Railroad Museum, and the Air and Military Museum.

Springfield and the surrounding region offers a range of recreational opportunities, including collegiate and professional sporting events, golf courses, camping, and hiking on the Ozark Greenways. The completion of the South Creek/Wilson's Creek Greenway would provide additional recreational opportunities. In addition to General Sweeney's Museum of Civil War History, other regional sites provide educational and interpretive opportunities associated with the Battle of Wilson's Creek, including the Pea Ridge National Military Park, Fort Scott National Historic Site, and Prairie Grove Battlefield State Park.

The no-action alternative would contribute a minor to moderate, long-term, beneficial component to cumulative impacts on recreation and leisure in the region by providing additional opportunities for recreational and leisure activities.

***Conclusion.*** The no-action would have a minor, long-term, beneficial impact on recreation and leisure by maintaining open space and continuing to provide opportunities for hiking, bicycling, horseback riding, and other recreational opportunities. This impact would not constitute impairment of park resources and values.



## **Impacts on Park Access and Transportation**

Under the no-action alternative, increased visitation could exceed existing parking capacity at peak times and result in increased roadside parking along the tour-road loop. In addition, long-term parking at interpretive pullouts could increase, which would create traffic hazards as well as conflicts between recreational and interpretive users. As outlined in the “Draft Wilson’s Creek Transportation Study,” the park would work with local and regional organizations to develop bicycle lanes along County Road ZZ and Route 182 near the park to facilitate access by bicyclists, joggers, and pedestrians.

***Cumulative Impacts.*** A variety of past, present, and reasonably foreseeable actions have affected and would continue to affect access to the park. Prior to its establishment in 1960, Wilson’s Creek National Battlefield was bounded by several roads, including County Road ZZ to the west; and the southeast corner of the park was isolated from the rest of the battlefield by a developed road. Modifications to County Road ZZ since the 1940s have decreased impediments to traffic flow (e.g., removal of abrupt, 90-degree turns) and have created a direct roadway accessing areas south of the park. In addition, general improvements in transportation corridors throughout the region have increased access to the park on improved roadways from the communities of Springfield, Republic, Battlefield, and Nixa.

Upon establishment of the park, part of the road that passed through the southeast corner of the park was incorporated into the tour-road loop, and no longer directly connects to roads east of the park. In addition, the intersection of County Road ZZ and Route 182 was modified at the

northwest corner of the park to improve safety and provide accessibility to the visitor center and tour-road loop.

Current estimates predict the population in the region of the park to increase by approximately 40 percent (or nearly 65,000 people) between the years 2000 and 2020. As the regional population grows, additional modifications and improvements to transportation corridors would be required. Proposed improvements currently under consideration include widening County Roads M and MM, constructing the Highway 60 Bypass, and implementing the Springfield/Greene County Comprehensive Plan, which would increase access to the park and surrounding areas.

The no-action alternative would contribute a negligible, long-term, adverse component to cumulative impacts on access and transportation by failing to address increased traffic associated with increased park visitation.

***Conclusion.*** The no-action alternative would have a minor, long-term, adverse effect on access and transportation. Parking at existing facilities would more frequently exceed capacity causing visitors to more often park at alternative locations, including road shoulders and interpretive pullouts. This low level of impact would not constitute impairment of park resources and values.

## **Alternative B — Wilson’s Creek National Battlefield Commemoration (Preferred Alternative)**

### **Impacts on Cultural Resources**

***Historic Sites and Structures.*** Under the preferred alternative, the focus on commemoration would increase visitor awareness of and sensitivity to the

significance of the park's resources. The interior of the Ray House would be included in the resource preservation zone, mitigating the potential for impacts due to visitor use.

***Cumulative Impacts.*** As described above under "Impacts (of the No-Action Alternative) on Historic Sites and Structures," a variety of human actions have affected and continue to affect historic sites and structures in the region of the park. Wilson's Creek was once a thriving agricultural community. The gradual removal of buildings and structures eliminated many historic resources related to the battle. The above actions, combined with interpretive programs at regional Civil War-related sites, such as General Sweeney's Museum of Civil War History, would help inform visitors and regional residents of the need to protect the special character of Wilson's Creek National Battlefield.

The preferred alternative would not contribute to cumulative impacts on historic sites and structures in the region.

***Conclusion.*** The preferred alternative would not affect historic sites and structures in the park. Although visitation would increase, historic structures, including the Ray House, would be protected and programs would be implemented to increase visitor awareness of the importance of historic sites in the park. This would not constitute impairment of park resources and values.

***Archeological Resources.*** Under the preferred alternative, the focus on commemoration and restrictions on recreational activity would reduce the incidence of visitor access to and use of the park's 50 known archeological sites. Park visitors would be informed of the significance and sensitive nature of the park's archeological resources. Parking lot

construction and landscape rehabilitation could disturb previously unknown archeological sites. Such disturbance would result in negligible, short- and long-term, adverse impacts on archeological resources. The addition of lands identified in the boundary assessment for the park could provide additional protection for battle-related archeological resources located in these areas.

***Cumulative Impacts.*** As described above under "Impacts (of the No-Action Alternative) on Archeological Resources," a variety of human actions have affected and continue to affect archeological resources in the region of the park. Agricultural and other activities that occurred after the battle could have obscured belowground resources at and in the vicinity of Wilson's Creek. In addition, gradual development of additional acres in the region, including development of additional parking facilities and trails in the park, could disturb archeological sites and artifacts.

The preferred alternative would contribute a negligible, long-term, adverse component to cumulative impacts on archeological resources in the region.

***Conclusion.*** The preferred alternative would have a negligible, long-term, adverse impact on archeological resources at the park due to potential disturbance of archeological sites associated with construction of additional trails and parking facilities. This minimal level of impact would not constitute impairment of park resources and values.

***Cultural Landscape.*** Under the preferred alternative, 718 acres (40%) of the park would be zoned for battlefield landscape enhancement in order to preserve and retain the historic character of the landscape. An additional 546 acres (30%) of the park

would be zoned as landscape maintenance where the landscape would be prepared for future rehabilitation. Although most actions under this alternative would focus on landscape enhancement, construction of additional parking and trails would add new elements within a few acres of the park that were not components of the historic cultural landscape. The lands identified in the boundary assessment for the park contain significant battle-related sites. Their addition would enhance the overall cultural landscape while providing protection from visual and auditory intrusions.

*Cumulative Impacts.* As described above under “Impacts (of the No-Action Alternative) on Cultural Landscape,” a variety of human actions have affected and continue to affect the landscape at and in the vicinity of the park. Extensive conversion of the battlefield for agricultural purposes and subsequent invasion of fallow fields by dense forest and invasive species have altered the historical landscape since the time of the battle in 1861. In addition to vegetative changes, deterioration and destruction of buildings have altered and continue to alter the landscape. Continued development in the region of the park affects the visual integrity of the landscape, although recent park actions under the *Master Plan* have begun the gradual rehabilitation of the landscape to 1861 conditions.

The preferred alternative would contribute a major, long-term, beneficial component to cumulative impacts on the cultural landscape through enhancement of nearly one half (718 acres) of the entire park.

*Conclusion.* The preferred alternative would have a major, long-term, beneficial impact on the cultural landscape at the park. Approximately 720 acres (40%) of the

park’s landscape would be returned to historical conditions, while another 550 acres would be maintained to control invasive species and screen visual and auditory intrusions. This impact would not constitute impairment of park resources and values.

*Archival/Museum Collections.* Under the preferred alternative, the focus on commemoration and interpretation would heighten researchers’ awareness of Wilson’s Creek’s special character and for the need to protect the park’s resources. Increased use of archival materials associated with increased visitation could degrade primary source materials in the collection. The addition of the archives and museum collections of the Sweeney Civil War Museum would improve the park’s current archival and artifact collection.

*Cumulative Impacts.* As described above under “Impacts (of the No-Action Alternative) on Archival/Museum Collections,” several facilities in the region maintain archival collections related to historic events in the area, including the Civil War. In addition, construction of a new research library at the park would provide additional storage space and protection for archival and museum collections. The park would also provide visitors with information concerning historical events at and in the vicinity of Wilson’s Creek National Battlefield. The preferred alternative would contribute a negligible to minor, long-term, beneficial component to cumulative impacts on archival collections in the region.

*Conclusion.* The preferred alternative would have a minor, short- and long-term, adverse impact on the park’s archival collection due to degradation of archival materials associated with increased visitation and use of facilities. This low level of impact would



not constitute impairment of park resources and values.

### **Impacts on Visitor Experience and Aesthetic Resources**

**Visitor Use.** Under the preferred alternative, visitor use would increase gradually over time as a result of regional population growth. Park facilities would be expanded to accommodate additional visitors and educational and interpretive opportunities would increase. There is the potential for conflict between interpretive programs and recreational use. The park staff would focus primarily on protecting resources and managing to interpret and commemorate the Battle of Wilson's Creek.

Despite the increased availability of equestrian parking under this alternative, recreational use would be maintained at a level that does not interfere with interpretive and commemorative activities. Park staff would manage use to protect the park's significant cultural and natural resources. Passive recreation, including dispersed hiking, would be permitted on 212 acres of the site. The addition of lands identified in the boundary assessment would provide additional opportunities for visitor use of the site. The addition of the General Sweeney Civil War Museum would enhance the visitor's ability to understand the historical context of the battle.

**Cumulative Impacts.** As described above under "Impacts (of the No-Action Alternative) on Visitor Use," a variety of human actions have affected and continue to affect visitor use at the park. Since its designation as a national battlefield, the park and local organizations have improved accessibility and provided activities to encourage use and promote education.

As the regional population continues to grow, regional infrastructure would be modified and expanded, which would increase site accessibility and enhance visitation. Such activities would likely include construction of the Highway 60 Bypass, widening of County Roads M and MM, and construction of the South Creek/Wilson's Creek and James River Greenways.

The preferred alternative would contribute a minor to moderate, long-term, beneficial component to cumulative impacts on visitor use in the region by accommodating a greater number of visitors and providing increased opportunities for passive recreation.

**Conclusion.** The preferred alternative would have a moderate, long-term, beneficial impact on visitor use at the park. Expanded areas for parking and passive recreation would accommodate additional visitors while maintaining access to park facilities, such as the visitor center and roadside exhibits. This impact would not constitute impairment of park resources and values.

**Visitor Experience and Interpretation.** Under the preferred alternative, visitors would have increased opportunities to understand and appreciate the significance of Wilson's Creek National Battlefield. Extensive landscape rehabilitation would enhance visitors' sense of place within the 1861 landscape, which would increase visitor understanding, knowledge, and enjoyment of the park. Expanded interpretive focus zones covering approximately 200 acres would allow visitors access to important sites on the battlefield with increased interpretative opportunities to understand and appreciate events that occurred before, during, and after the Battle of Wilson's Creek. The addition

of lands identified in the boundary assessment would enhance the visitor experience and park interpretive program by providing for a more comprehensive experience of the battlefield.

Although interpretive opportunities would expand under the preferred alternative, horse trails and active recreational facilities would be maintained at current levels that do not conflict with interpretive and restorative experiences. Passive recreation, however, would be encouraged within the interpretive focus area. The tour-road loop would remain open to walkers, joggers, and bicyclists at a level that does not detract from the park's historical setting.

***Cumulative Impacts.*** As described above under "Impacts (of the No-Action Alternative) on Visitor Experience and Interpretation," a variety of human actions have affected and continue to affect visitor experience and interpretation at the park. Since its designation as a national battlefield, visitor activities and interpretive opportunities have increased. Construction of the visitor center and tour-road loop provide interpretive information, as do park ranger-led tours. In addition, the park has begun managing the landscape to restore and maintain diverse habitats that are regionally rare and provide uncommon experiences, such as walks along forested streams and historical reflection at the location of the Battle of Wilson's Creek. As the regional population continues to grow, visitor experiences at the park would be reduced by visual and auditory intrusions associated with increased traffic and residential development in nearby areas.

The preferred alternative would contribute a minor, long-term, beneficial component to cumulative impacts on visitor experience and interpretation in the region by increasing

recreational opportunities and interpretive facilities.

***Conclusion.*** The preferred alternative would have a moderate, long-term, beneficial impact on visitor experience and interpretation at the park. Expanded areas for parking and passive recreation would accommodate additional visitors while maintaining access to interpretive facilities and promoting commemoration of the historical setting and landscape. This impact would not constitute impairment of park resources and values.

***Visual and Scenic Resources.*** Under the preferred alternative, increased visitation is not likely to affect the quality of visual resources within the park. Most of the parkland just inside the border of the park would be managed as landscape maintenance areas where passive visitor use would be permitted but not encouraged. Other areas along the boundary would be managed as resource preservation areas where visitor use would be limited. Discouraging visitor use near the boundary and encouraging growth and maintenance of woody vegetation would permit visitors to view the park's landscape as it was in 1861 and would provide limited screening of developments and visual impacts beyond the park's boundary. Addition of lands identified in the boundary assessment would contribute to the park's visual and scenic resources and help maintain the view from key locations along the tour road.

***Cumulative Impacts.*** As described above under "Impacts (of the No-Action Alternative) on Visual and Scenic Resources," a variety of human actions have affected and continue to affect such resources at the park. As the regional population grows and residential development spreads to areas that were

previously agricultural, scenic views from areas within the park would be compromised.

The preferred alternative would contribute a moderate, long-term, beneficial component to cumulative impacts on scenic resources in the region by reducing dispersed visual intrusions (e.g., cars and buses) within the park and maintaining an undeveloped landscape.

**Conclusion.** The preferred alternative would have a moderate, long-term, beneficial impact on the park's visual and scenic resources by preserving internal open space and screening external visual intrusions, in part, as a result of including lands identified in the park boundary assessment. This impact would not constitute impairment of park resources and values.

### **Impacts on Natural Resources**

***Soil.*** Under the preferred alternative, the construction of additional parking areas and trails would result in minor erosion, displacement, and compaction of soils. Construction of these additional features would impact soil properties, including soil porosity, water infiltration, water-holding capacity, or rates of surface runoff. As described previously in the "Mitigation" section, best management practices, including use of soil retention structures and prompt revegetation of all disturbed sites, would minimize loss of soil associated with construction of new trails and structures.

***Cumulative Impacts.*** As described above under "Impacts (of the No-Action Alternative) on Soils," a variety of human actions have affected and continue to affect soils in the region of the park. As agriculture and residential development displaced native vegetation, soil erosion increased and soil infiltration decreased, resulting in increased

runoff throughout much of the Wilson's Creek watershed. Predicted future development in the region would impact soils in a similar fashion.

The preferred alternative would contribute a negligible, long-term, adverse component to cumulative impacts on soils by increasing the extent of impermeable and exposed soils in the region.

***Conclusion.*** Development of parking and trails would have a minor, short- and long-term, adverse impact on soils by increasing the extent of impermeable and erodible surfaces in the park by paving an additional parking area and removing vegetative cover from additional areas in the park. Although additional trails and parking would be developed, these areas represent only a small fraction of the 1,750-acre park. This low level of impact would not constitute impairment of park resources and values.

***Water Quality.*** Under the preferred alternative, erosion of soils would occur along existing and newly constructed trails and storm runoff would increase at the location of the proposed parking lot. The distance of trails from Wilson's Creek and other waterways in the park (typically 50 feet or more), relatively flat topography in the valley bottoms, and dense vegetation along stream corridors would prevent eroded sediments or contaminants in storm runoff from degrading water quality (Wenger 1999).

***Cumulative Impacts.*** As described above under "Impacts (of the No-Action Alternative) on Water Quality," a variety of human actions have affected and continue to affect water quality in the region of the park. Agriculture and urban development have increased runoff and discharge of contaminants into Wilson's Creek and its drainages. In addition, uncontrolled spills



from a Springfield wastewater treatment facility have degraded water quality in the region and may do so in the future.

The preferred alternative would not contribute to cumulative impacts on water quality in the region.

**Conclusion.** The preferred alternative would not affect water quality in the park. Although erosion along trails may increase slightly, the distance of trails from waterways, vegetation, and topography would prevent degradation of water quality. This would not constitute impairment of park resources and values.

**Vegetation.** Under the preferred alternative, more than 1,400 acres, or about 80 percent of the park, would be zoned for landscape rehabilitation, resource preservation, or landscape maintenance. Of these areas, 718 acres would be rehabilitated to 1861 conditions. In general, these zoning designations would maximize opportunities to restore the landscape, improve habitat for plant species of concern, and control invasive, exotic vegetation. Owing to development of additional parking and trails in the park, however, a few acres of vegetation would be lost. Other vegetation losses would occur as a result of clearing related to landscape rehabilitation and maintenance. Vegetation management on lands identified in the boundary assessment would enhance efforts to control exotic plant species, eliminate noxious weeds, and restore the historic landscape.

**Cumulative Impacts.** As described above under “Impacts (of the No-Action Alternative) on Vegetation,” a variety of human actions have affected and continue to affect vegetation in the region of the park. Over the years, most native vegetation has been eliminated by land-clearing activities

associated with agriculture and urban/residential development. As land has been cultivated and developed, a variety of non-native, exotic species have invaded the landscape and currently dominate many areas within and adjacent to the park.

The preferred alternative would contribute a moderate, long-term, beneficial component to cumulative impacts on vegetation in the region by preserving open space and restoring more than 700 acres of habitat to historical 1860s conditions.

**Conclusion.** The preferred alternative would have a major, long-term, beneficial impact on native vegetation in the park. Approximately 700 acres (40%) of the park would be maintained to enhance native plant communities and vegetation, while 700 acres (40%) would be rehabilitated to 1861 conditions. Minor short-term adverse impacts related to clearing and burning would be offset by the long-term beneficial impact of these actions. In addition, actions would be undertaken to control and/or remove exotic species on hundreds of acres within the park. This impact would not constitute impairment of park resources and values.

**Wildlife.** Under the preferred alternative, restoration of 700 acres of habitat in the park, as well as maintenance of 700 additional acres, including many acres of dense, second-growth forest, would improve the extent and diversity of wildlife habitat in the park. Restoration of native vegetation and control of exotic species would increase palatable forage available to herbivores, while maintaining denser, forested areas that provide refuge for some wildlife and nesting habitat for birds. Development of additional trails, however, would increase human presence and intrusion throughout much of the park. In addition, construction of a new

parking facility would result in the loss of several acres of habitat, which could affect wildlife behaviors such as courtship and nesting. The addition of lands identified in the boundary assessment could provide additional wildlife habitat for some wildlife species.

*Cumulative Impacts.* As described above under “Impacts (of the No-Action Alternative) on Wildlife,” a variety of human actions have affected and continue to affect wildlife in the region of the park. Past actions have eliminated the majority of native habitat in the area, while ongoing and planned activities, including infrastructure and residential development, would result in further loss and fragmentation of wildlife habitat. Other actions, including hunting and introduction of domestic animals, also have affected and continue to affect wildlife in the area.

The preferred alternative would contribute a moderate, long-term, beneficial component to cumulative impacts on wildlife in the region by preserving open space and providing a diverse mosaic of native vegetation and habitats.

*Conclusion.* The preferred alternative would have a moderate, long-term, beneficial impact on wildlife in the park. The park would continue to protect one of the largest remnant patches of wildlife habitat in the region and would restore approximately 700 acres of native vegetation, while maintaining other wildlife habitats, such as second-growth forest and riparian areas. This impact would not constitute impairment of park resources and values.

*Special Status Species.* Under the preferred alternative, rehabilitation of the battlefield landscape would improve habitat for the park’s endangered plant species, which are

threatened by colonization of open grasslands by forest. Almost all areas known to support special status species, both plants and animals, would be managed as a battlefield landscape enhancement area (718 acres) or resource preservation area (154 acres). Exceptions include a population of greenthread north of the visitor center that would be included in an administrative development area and a population of royal catchfly in the southeast corner of the park that would fall within an interpretive focus area. Battlefield landscape enhancement and resource preservation areas with corresponding protection from intensive visitor disturbance would cover almost 50 percent of the total park acreage. The addition of lands identified in the park boundary assessment would provide additional protection for special status species that occur on these lands.

*Cumulative Impacts.* As described above under “Impacts (of the No-Action Alternative) on Special Status Species,” a variety of human actions have affected and continue to affect rare species at the park. Over the years, most native habitats in the region have been altered or displaced by agriculture and urban/residential development. Agriculture and urban development have destroyed habitat necessary to support special status species and have affected the quality of remnant habitats, including Wilson’s Creek and its tributaries.

The preferred alternative would contribute a moderate, long-term, beneficial component to cumulative impacts on special status species in the region by preserving habitat and controlling access to caves that support gray bat and grotto salamander.

*Conclusion.* The preferred alternative would have a moderate, long-term, beneficial

impact on special status species in the park. All areas that support special status species, including caves and limestone glades, would be protected from intensive visitor disturbance, although passive recreation would be permitted in battlefield landscape enhancement areas. Caves that support gray bat and grotto salamander would remain off-limits to visitor use. This impact would not constitute impairment of park resources and values.

### **Impacts on the Social and Economic Environment**

***Recreation and Leisure.*** Under the preferred alternative, the NPS would focus on commemoration and interpretation. Additional recreational use would not be encouraged and would be restricted predominantly to interpretive areas. Additional trails, however, may be constructed within 546 acres (30%) of the park that would be managed as landscape maintenance areas. Interpretation would become the major focus of the park staff and areas designated for interpretive purposes would be expanded to encompass 212 acres of the park, which would provide an alternative opportunity for active recreation. The addition of lands identified in the boundary assessment could provide additional opportunities for recreation and leisure.

***Cumulative Impacts.*** As described above under “Impacts (of the No-Action Alternative) on Recreation and Leisure,” a variety of human actions have affected and continue to affect recreation and leisure in the region of the park. The city of Springfield and the surrounding area are home to a variety of cultural, recreational, and historic sites that provide diverse opportunities for recreational and leisure activities. In addition, proposed development of the South Creek/Wilson’s

Creek Greenway would further increase recreational opportunities in the region. The preferred alternative would contribute a negligible, long-term, beneficial component to cumulative impacts on recreation and leisure in the region by continuing to provide limited opportunities for recreational and leisure activities in the park.

***Conclusion.*** The preferred alternative would have a minor, long-term, beneficial impact on recreation and leisure in the park. Although interpretive and educational opportunities would increase, areas managed to provide other recreational activities would be restricted to the recreation tour-road loop area. This impact would not constitute impairment of park resources and values.

### **Impacts on Park Access and Transportation**

Under the preferred alternative, no additional points of access to the park would be developed for bicyclists or other greenway users. As outlined in the “Draft Wilson’s Creek Transportation Study,” the park staff would work with local and regional organizations to develop bicycle lanes along County Road ZZ and Route 182 to facilitate park access. The tour-road loop would remain open to walkers, joggers, and bicyclists at a level that does not detract from the park’s historical setting. In addition, parking facilities would be expanded to accommodate additional visitors and equestrians, which would reduce the frequency that parking demands exceed capacity; reduction of this frequency would alleviate parking congestion and long-term parking conflicts in undesignated areas, such as roadside pullouts. The addition of lands identified in the boundary assessment could enhance visitor access to the park.

***Cumulative Impacts.*** As described above under “Impacts (of the No-Action



Alternative) on Park Access and Transportation,” a variety of human actions have affected and continue to affect visitor use at the park. Since its designation as a national battlefield, the park and local agencies have improved accessibility by modifying and improving regional roads and highways.

As the regional population grows, infrastructure would be modified and expanded resulting in increased access and improved transportation corridors. Such modifications would likely include construction of the Highway 60 Bypass, widening of County Roads M and MM, and construction of the South Creek/Wilson’s Creek and James River Greenways.

The preferred alternative would contribute a negligible, long-term, beneficial component to cumulative impacts on access and transportation by addressing increased traffic associated with increased park visitation.

**Conclusion.** The preferred alternative would have a minor, long-term, beneficial impact on access and transportation at the park. Parking at existing facilities would be improved, which would decrease long-term visitor parking along road shoulders and roadside pullouts. This impact would not constitute impairment of park resources and values.

### **Impacts on Land Use**

Under the preferred alternative, the park boundaries could be adjusted to incorporate significant battle-related lands identified in the boundary assessment. If these lands were purchased through a fee-simple acquisition, the types of use could change on several hundred acres of agricultural lands in Greene and Christian Counties. If the lands were placed under easements or cooperative

agreements, the lands could remain in agricultural production, but these actions could limit the types of use and development that could occur on these lands in the future. Adjustments to the park boundaries could result in a minor to moderate, long-term, adverse impact on traditional uses of the lands identified in the boundary assessment.

*Cumulative Impacts.* A variety of human actions have affected and continue to affect regional land use. Since its designation as a national battlefield, land use has changed and diversified from traditional agricultural uses to increased residential and commercial use, resulting in large part from population growth and economic diversification.

The preferred alternative could contribute a minor to moderate long-term, adverse component to cumulative impacts on traditional land uses by taking additional lands out of agricultural production.

**Conclusion.** The preferred alternative would have a minor, long-term, adverse impact on land use in the region. This adverse impact would not constitute impairment of park resources and values.

### **Impacts on Revenue Base – Local General Government**

Under the preferred alternative, the park boundaries could be adjusted to incorporate significant battle-related lands identified in the boundary assessment. If these lands were added to the park through a fee-simple acquisition, this action would remove several hundred acres of agricultural lands from the tax rolls of Greene and Christian Counties. If the lands were placed under an easement or a cooperative agreement, the lands could remain in agricultural production, but these actions could limit the types of development that could occur on these lands. Adjustments to the park

boundaries could result in a minor, long-term, adverse impact on the revenue bases of Greene and Christian Counties.

*Cumulative Impacts.* A variety of human actions have affected and continue to affect visitor use at the park. Since its designation as a national battlefield, the local economy has diversified from an agricultural base and the regional population has greatly increased. Urban growth and suburban development have slowly encroached on the park. Farmlands have increasingly been converted to residential or commercial use. The net result of population growth and increased residential and commercial development has been an increase of the revenue base of Greene and Christian Counties.

The preferred alternative could contribute a negligible, long-term, adverse component to cumulative impacts on the counties' revenue bases by potentially eliminating or limiting production or development on these lands.

*Conclusion.* The preferred alternative would have a minor, long-term, adverse impact on the revenue base of Greene and Christian Counties. County revenues could be reduced as a result of adjustment to the park boundaries. This adverse impact would not constitute impairment of park resources and values.

## **Alternative C — Wilson Creek Civil War Research Center**

### **Impacts on Cultural Resources**

*Historic Sites and Structures.* Under the Civil War Research Center Alternative, increased visitor access to the park's historic structures would be encouraged. This greater level of visitation, however, would be carefully managed as part of the park's interpretive program. Park ranger-led tours

in sensitive resource areas would inform visitors of the significance of the park's 27 historic structures, thus mitigating impacts from increased visitation. The interior of the Ray House would be included in the Resource preservation zone and unescorted access would not be allowed.

*Cumulative Impacts.* As described above under "Impacts (of the No-Action Alternative) on Historic Sites and Structures," a variety of human actions have affected and continue to affect historic sites and structures in the region of the park. Wilson's Creek was once a thriving agricultural community. The gradual removal of buildings and structures eliminated many historic resources related to the battle. The above actions, combined with interpretive programs at regional Civil War-related facilities such as the General Sweeney's Museum of Civil War History, would help inform visitors and regional residents of need to protect the special character of Wilson's Creek National Battlefield.

The Civil War Research Center Alternative would not contribute to cumulative impacts on historic sites and structures in the region.

*Conclusion.* The Civil War Research Center Alternative would not affect historic sites and structures in the park. Although visitation would increase, historic structures, including the Ray House, would be protected and programs would be implemented to increase visitor awareness of the importance of historic sites in the park. This impact would not constitute impairment of park resources and values.

*Archeological Resources.* Under the Civil War Research Center Alternative, visitors would be encouraged to visit archeological sites under excavation. Archeological

research would be interpreted as part of the park's overall interpretive program. Park visitors would be informed of the special and sensitive character of Wilson's Creek's archeological resources, helping to mitigate impacts from increased visitation. These resources would be zoned as part of the resource preservation area. Visitor access would be monitored, thus eliminating impacts due to recreational use. The addition of lands identified in the boundary assessment for the park could provide additional protection for battle-related archeological resources located in these areas.

*Cumulative Impacts.* As described above under "Impacts (of the No-Action Alternative) on Archeological Resources," a variety of human actions have affected and continue to affect archeological resources in the region of the park. Agriculture and other activities that occurred after the battle could have obscured belowground resources at and in the vicinity of Wilson's Creek. In addition, gradual development of additional acres in the region, including development of additional parking facilities and trails in the park, could disturb archeological sites and artifacts.

The Civil War Research Center Alternative would contribute a negligible, long-term, adverse component to cumulative impacts on archeological resources in the region.

*Conclusion.* The Civil War Research Center Alternative would have a negligible, long-term, adverse impact on archeological resources at the park due to potential disturbance of archeological sites associated with historical excavations and construction of additional trails and parking facilities. This minimal impact would not constitute impairment of park resources and values.

***Cultural Landscapes.*** Under the Civil War Research Center Alternative, 139 acres (8%) of the park would be zoned for landscape enhancement in order to return the landscape to its 1861 condition. An additional 726 acres (40%) of the park would be zoned as landscape maintenance where the landscape would be prepared for future battlefield landscape enhancement. Although most actions under this alternative would restore or begin preparation to restore the landscape to 1861 conditions, construction of additional parking and trails would add new elements within a few acres of the park that were not components of the historical cultural landscape. Addition of lands identified in the boundary assessment would enhance the cultural landscape by including critical battle-related lands within the park boundaries.

*Cumulative Impacts.* As described above under "Impacts (of the No-Action Alternative) on Cultural Landscape," a variety of human actions have affected and continue to affect the landscape in and adjacent to the park. Extensive conversion of the battlefield for agricultural purposes and subsequent invasion of fallow fields by dense forest and invasive species have altered the historic landscape since the time of the battle in 1861. In addition to vegetative changes, deterioration and destruction of buildings have altered and continue to alter the landscape. Continued development in the region of the park affects the visual integrity of the landscape, although recent park actions have begun the gradual rehabilitation of the landscape to 1861 conditions.

The Civil War Research Center Alternative would contribute a moderate, long-term, beneficial component to cumulative impacts on the cultural landscape by restoring or initiating rehabilitation on approximately



one-third (870 acres) of the entire battlefield landscape.

**Conclusion.** The Civil War Research Center Alternative would have a moderate, long-term, beneficial impact on the cultural landscape at the park. Approximately 140 acres (8%) of the park's landscape would be returned to historical conditions, while another 730 acres (40%) would be prepared for rehabilitation to 1861 conditions. This impact would not constitute impairment of park resources and values.

**Archival/Museum Collections.** Under the Civil War Research Center Alternative, research in the park archives by local students, genealogists, academics, and Civil War enthusiasts would be encouraged. Procedures and guidelines for researchers would minimize potential degradation of materials that could result from increased use of the park's collections. The addition of the archives and museum collections of the Sweeney Civil War Museum would improve the park's current archival and artifact collection.

**Cumulative Impacts.** As described above under "Impacts (of the No-Action Alternative) on Archival/Museum Collections," several facilities exist in the region that maintain archival collections relevant to historical events, including the Civil War. In addition, construction of a new visitor center and research library addition at the park would provide additional storage space and information concerning historical events at and in the vicinity of Wilson's Creek National Battlefield.

The Civil War Research Center Alternative would contribute a negligible to minor, long-term, beneficial component to cumulative impacts on archival collections in the region.

**Conclusion.** The Civil War Research Center Alternative would have a negligible, short- and long-term, beneficial impact on the park's archival collection due to improved storage and management of archival materials. This impact would not constitute impairment of park resources and values.

### **Impacts on Visitor Experience and Aesthetic Resources**

**Visitor Use.** Under the Civil War Research Center Alternative, visitor use would increase gradually over time as a result of regional population growth. Park facilities would be expanded to accommodate additional visitors and educational and interpretive opportunities would increase. Despite the increased availability of equestrian parking under this alternative, recreational use would be maintained at a level that does not interfere with interpretive and commemorative activities. There would be an increase in the numbers of researchers using the archives and conducting on-site research. The NPS would encourage school and tour groups to make the park a destination, which would increase visitor use of the site. The addition of lands identified in the boundary assessment would provide additional opportunities for visitor use of the site. The addition of the General Sweeney Civil War Museum would enhance the visitor's ability to understand the historical context of the battle.

**Cumulative Impacts.** As described above under "Impacts (of the No-Action Alternative) on Visitor Use," a variety of human actions have affected and continue to affect visitor use at the park. Since its designation as a national battlefield, the park and local organizations have improved accessibility and provided activities to encourage use and promote education.

As the regional population continues to grow, regional infrastructure would be modified and expanded, which would increase site accessibility and enhance visitation. Such activities would likely include construction of the Highway 60 Bypass, widening of County Roads M and MM, and construction of the South Creek/Wilson's Creek and James River Greenways.

The Civil War Research Center Alternative would contribute a minor to moderate, long-term, beneficial component to cumulative impacts on visitor use in the region by accommodating a greater number of visitors and providing increased opportunities for research and educational activities.

**Conclusion.** The Civil War Research Center Alternative would have a moderate, long-term, beneficial impact on visitor use at the park. Expanded areas for parking and passive recreation would accommodate additional visitors while access to archival collections, research materials, and educational activities would be expanded. This impact would not constitute impairment of park resources and values.

#### ***Visitor Experience and Interpretation.***

Under the Civil War Research Center Alternative, more than 660 acres, (38%) of the park would be zoned for resource preservation. Visitors would mainly experience the park through park ranger-led tours at the sites of ongoing cultural and natural resource research, as well as throughout 60 acres (3%) managed as interpretive focus areas.

This alternative would increase access to the park for research purposes and, therefore, the number of investigators conducting research in the area. Increased research would result in better interpretive and

educational programs for the public and increase visitor understanding of the park history. Interpretation would focus on explaining historical processes and the significance of Wilson's Creek National Battlefield to park visitors.

Opportunities for recreation, including horseback riding, bicycling, running, and walking, would be maintained at approximately their current levels. The tour-road loop would remain open to walking, jogging, and bicycling at levels that do not detract from the integrity of the historical scene. The addition of lands identified in the boundary assessment would enhance the visitor experience and park interpretive program by providing for a more comprehensive experience of the battlefield and related resources.

**Cumulative Impacts.** As described above under "Impacts (of the No-Action Alternative) on Visitor Experience and Interpretation," a variety of human actions have affected and continue to affect visitor experience and interpretation at the park. Since its designation as a national battlefield, visitor activities and interpretive opportunities have increased. Construction of the visitor center and tour-road loop provide interpretive information, as do park ranger-led tours of historic sites and structures, such as the Ray House. In addition, the park has begun managing the landscape to restore and maintain diverse habitats that are regionally rare and provide uncommon experiences, such as walks along forested streams and historical reflection at the location of the Battle of Wilson's Creek. As the regional population continues to grow, visitor experiences at the park would be reduced by visual and auditory intrusions associated with increased traffic and residential development in nearby areas.

The Civil War Research Center Alternative would contribute a moderate, long-term, beneficial component to cumulative impacts on visitor experience and interpretation in the region by increasing the number and extent of research opportunities, the quality of interpretive programs, and outreach programs to schools and groups throughout the region.

**Conclusion.** The Civil War Research Center Alternative would have a moderate, long-term, beneficial impact on visitor experience and interpretation at the park. Expanded areas for parking and passive recreation would accommodate additional visitors. In addition, expanded research opportunities, outreach programs, and interpretive programs would promote appreciation of the Battle of Wilson's Creek and enhance general knowledge pertaining to the Civil War. This impact would not constitute impairment of park resources and values.

***Visual and Scenic Resources.*** Under the Civil War Research Center Alternative, increased visitation is not likely to affect the quality of visual resources within the park. Most of the parkland adjacent to the park boundary would be managed as landscape maintenance and resource preservation areas where passive visitor use would be permitted but not encouraged. Discouraging visitor use in border areas and encouraging growth and maintenance of woody vegetation would permit visitors to view the park's landscape as it was in 1861 and would provide limited screening of developments and visual impacts beyond the park's boundary. The addition of lands identified in the boundary assessment would enhance the park's visual and scenic resources while providing additional protection from outside visual and auditory intrusions.

**Cumulative Impacts.** As described above under "Impacts (of the No-Action Alternative) on Visual and Scenic Resources," a variety of human actions have affected and continue to affect such resources at the park. As the regional population grows and residential development spreads to areas that were previously agricultural, scenic views from areas within the park would be compromised.

This alternative would contribute a moderate, long-term, beneficial component to cumulative impacts on scenic resources in the region by reducing dispersed visual intrusions (e.g., cars and buses) within the park and maintaining an undeveloped landscape.

**Conclusion.** The Civil War Research Center Alternative would have a moderate, long-term, beneficial impact on the park's visual and scenic resources by preserving internal open space and screening external visual intrusions. This impact would not constitute impairment of park resources and values.

### **Impacts on Natural Resources**

***Soil.*** Under the Civil Center Research Center Alternative, increased archeological excavation would impact park soils, as would construction of additional parking and the development of additional trails to provide visitors access to research sites. Excavation at additional sites and construction of additional features would impact soil properties, including soil porosity, water infiltration, water-holding capacity, or rates of surface runoff. As described previously in Section 2.4, "Mitigation," best management practices, including use of soil retention structures and prompt revegetation of all disturbed sites, would minimize loss of soil associated with construction of new trails and structures.



**Cumulative Impacts.** As described above under “Impacts (of the No-Action Alternative) on Soils,” a variety of human actions have affected and continue to affect soils at the park. As agriculture and residential development displaced native vegetation, soil erosion increased and soil infiltration decreased, resulting in increased runoff throughout much of the Wilson’s Creek watershed. Predicted future development in the region would impact soils in a similar fashion.

The Civil War Research Center Alternative would contribute a negligible, long-term, adverse component to cumulative impacts on soils by increasing the extent of impermeable and exposed soils in the region.

**Conclusion.** Development of additional excavation at research sites, parking, and trails would have a minor, long-term, adverse impact on soils by increasing the extent of impermeable and erodible surfaces in the park. Although additional trails and parking would be developed, these areas represent only a small fraction of the 1,750-acre park. This low level of impact would not constitute impairment of park resources and values.

**Water Quality.** Under the Civil War Research Center Alternative, erosion of soils would occur along existing and newly constructed trails and at excavation sites. In addition, storm runoff would increase at the location of the proposed parking lot and on paved trails. Some excavation sites, particularly excavation sites near the channel of Wilson’s Creek or its tributaries, may increase runoff and transport of sediments. Most excavations, however, would not likely be near waterways; and additional trails would not affect water quality in the park. In addition, as described

previously in the “Mitigation” section, best management practices, including use of soil retention structures and prompt revegetation of all disturbed sites, would be implemented to minimize erosion and reduce transport of contaminants into waterways.

**Cumulative Impacts.** As described above under “Impacts (of the No-Action Alternative) on Water Quality,” a variety of human actions have affected and continue to affect water quality in the region of the park. Agriculture and urban development have increased runoff and discharge of contaminants into Wilson’s Creek and its drainages. In addition, uncontrolled spills from a Springfield wastewater treatment facility have degraded water quality in the region in the past and may do so in the future.

The Civil War Research Center Alternative would contribute a negligible, long-term, adverse component to cumulative impacts on water quality in the region.

**Conclusion.** The Civil War Research Center Alternative would have a negligible, long-term, adverse impact on water quality in the park. Although increased erosion and transport of contaminants may occur under this alternative, implementation of best management practices and existing site conditions would minimize or eliminate degradation of water quality. This minimal impact would not constitute impairment of park resources and values.

**Vegetation.** Under the Civil War Research Center Alternative, 1,525 acres, equaling approximately 87 percent of the park’s total area, would be zoned for battlefield landscape enhancement, resource preservation, or landscape maintenance. Within these areas, 139 acres would be rehabilitated to 1861 conditions. In general,

conditions would minimize or eliminate degradation of water quality. This minimal impact would not constitute impairment of park resources and values.

***Vegetation.*** Under the Research and Education Emphasis Alternative, 1,525 acres, equaling approximately 87 percent of the park's total area, would be zoned for battlefield landscape enhancement, resource preservation, or landscape maintenance. Within these areas, 139 acres would be rehabilitated to 1861 conditions. In general, these zoning designations would enhance opportunities to restore the landscape, improve habitat for special status plant species, and control invasive, exotic vegetation. Due to development of additional parking, trails, and excavation associated with historical research, a few acres of vegetation would be lost in the park. Other losses of vegetation would occur as a result of burning and clearing to restore the historic landscape. Vegetation management on the lands identified for inclusion in the boundary assessment could further inhibit the spread of exotic plant species in the park.

***Cumulative Impacts.*** As described above under "Impacts (of the No-Action Alternative) on Vegetation," a variety of human actions have affected and continue to affect vegetation in the region of the park. Over the years, most native vegetation has been eliminated by land-clearing activities associated with agriculture and urban/residential development. As land has been cultivated and developed, a variety of non-native, exotic species have invaded the landscape and currently dominate many areas within and adjacent to the park.

The Research and Education Emphasis Alternative would contribute a minor, long-term, beneficial component to cumulative impacts on vegetation in the region by

preserving open space and restoring approximately 140 acres of habitat to historical 1860s conditions.

***Conclusion.*** The Research and Education Emphasis Alternative would have a moderate, long-term, beneficial impact on native vegetation in the park. Approximately 1,390 acres (80%) of the park would be maintained to enhance native plant communities and vegetation, while 139 acres (8%) would be rehabilitated to 1861 conditions. In addition, actions would be undertaken to control and/or remove exotic species on hundreds of acres within the park. This impact would not constitute impairment of park resources and values.

***Wildlife.*** Under the Research and Education Emphasis Alternative, battlefield landscape enhancement of 139 acres of habitat in the park, as well as maintenance of an additional 1,390 acres, including dense, second-growth forest, would improve the extent and diversity of wildlife habitat in the park. Restoration of native vegetation and control of exotic species would increase palatable forage available to herbivores, while maintaining denser forested areas that provide refuge for some species of wildlife and nesting habitat for birds. Development of additional trails, excavation, and interpretive programs associated with historical research would increase human presence and intrusion throughout much of the park, which could affect wildlife behaviors, such as courtship and nesting. In addition, construction of a new parking facility would result in the loss of several acres of habitat. The addition of lands identified in the boundary assessment, however, would provide additional wildlife habitat and likely more than offset these losses.

The Civil War Research Center Alternative would contribute a moderate, long-term, beneficial component to cumulative impacts on wildlife in the region by preserving open space and providing a diverse mosaic of native vegetation and habitats.

**Conclusion.** The Civil War Research Center Alternative would have a moderate, long-term, beneficial impact on wildlife in the park. The park would continue to protect one of the largest remnant patches of wildlife habitat in the region and would restore approximately 450 acres of native vegetation, while maintaining other wildlife habitats, such as second-growth forest and riparian areas. This impact would not constitute impairment of park resources and values.

**Special Status Species.** Under the Civil War Research Center Alternative, preservation and enhancement of the battlefield landscape would improve habitat for the park's endangered plant species, which are threatened by colonization of glades and grasslands by forest. Almost all areas known to support special status species, both plants and animals, would be managed as resource preservation areas (661 acres), where visitor use would be limited. Exceptions include a population of greenthread north of the visitor center that would be included in an administrative development area and a population of royal catchfly in the southeast corner of the park that would fall within a landscape maintenance area. In addition, caves that support gray bat and grotto salamander would be managed in a resource preservation area, remaining off-limits to visitors. Battlefield landscape enhancement and resource preservation areas with corresponding protection from intensive visitor disturbance would cover approximately 45 percent of the total park acreage. The addition of lands identified in

the park boundary assessment would provide additional protection for special status species that occur on these lands.

**Cumulative Impacts.** As described above under "Impacts (of the No-Action Alternative) on Special Status Species," a variety of human actions have affected and continue to affect rare species at the park. Over the years, most native habitats in the region have been altered or displaced by agriculture and urban/residential development. Agriculture and urban development have destroyed habitat necessary to support special status species and have affected the quality of remnant habitats, including Wilson's Creek and its tributaries.

The Civil War Research Center Alternative would contribute a moderate, long-term, beneficial component to cumulative impacts on special status species in the region by preserving and eventually improving habitat and controlling access to caves that support gray bat and grotto salamander.

**Conclusion.** The Civil War Research Center Alternative would have a moderate, long-term, beneficial impact on special status species in the park. Almost all areas that support special status species, including caves and limestone glades, would be managed within resource preservation areas where they would be protected to the greatest extent possible from visitor disturbance. This impact would not constitute impairment of park resources and values.

### **Impacts on the Social and Economic Environment**

**Recreation and Leisure.** Under the Civil War Research Center Alternative, increased park access and opportunities for research, education, and recreation would establish the park as one of the region's outstanding



cultural, natural, and recreational resources. This would have a long-term, minor, beneficial impact on recreational and leisure opportunities for the region's residents. The addition of lands identified in the boundary assessment could provide additional opportunities for visitor recreation and leisure.

*Cumulative Impacts.* As described above under "Impacts (of the No-Action Alternative) on Recreation and Leisure," a variety of human actions have affected and continue to affect recreation and leisure in the region of the park. The city of Springfield and the surrounding area are home to a variety of cultural, recreational, and historic sites that provide diverse opportunities for recreational and leisure activities. In addition, proposed development of the South Creek/Wilson's Creek Greenway would further increase recreational opportunities in the region.

The Civil War Research Center Alternative would contribute a minor to moderate, long-term, beneficial component to cumulative impacts on recreation and leisure in the region by providing additional opportunities for research, education, and recreation.

*Conclusion.* The Civil War Research Center Alternative would have a moderate, long-term, beneficial impact on recreation and leisure by slightly expanding current recreational opportunities, including potential construction of additional trails throughout 730 acres (40%) of the park. This impact would not constitute impairment of park resources and values.

#### **Impacts on Park Access and Transportation**

Under the Civil War Research Center Alternative, no additional points of access to the park would be developed for bicyclists

or other greenway users. As outlined in the "Draft Wilson's Creek Transportation Study," the park would work with local and regional organizations to develop bicycle lanes along County Road ZZ and Route 182 to facilitate park access. The tour-road loop would remain open to walkers, joggers, and bicyclists at a level that does not detract from the park's historical setting. In addition, parking facilities would be expanded to accommodate additional visitors and equestrians, which would reduce the frequency that parking demands exceed capacity; reduction of this frequency would alleviate parking congestion and long-term parking conflicts in undesignated areas such as roadside pullouts. The addition of lands identified in the boundary assessment could provide additional access points for visitors.

*Cumulative Impacts.* As described above under "Impacts (of the No-Action Alternative) on Park Access and Transportation," a variety of human actions have affected and continue to affect visitor use at the park. Since its designation as a national battlefield, the park and local agencies have improved access by modifying and improving regional roads and highways.

As the regional population grows, infrastructure would be modified and expanded resulting in increased access and improved transportation corridors. Such modifications would likely include construction of the Highway 60 Bypass, widening of County Roads M and MM, and construction of the South Creek/Wilson's Creek and James River Greenways.

The Civil War Research Center Alternative would contribute a negligible, long-term, beneficial component to cumulative impacts on access and transportation by addressing

increased traffic associated with increased park visitation.

**Conclusion.** The Civil War Research Center Alternative would have a minor, long-term, beneficial impact on access and transportation at the park. Parking at existing facilities would be improved, which would decrease long-term visitor parking along road shoulders and roadside pullouts. This impact would not constitute impairment of park resources and values.

### **Impacts on Land Use**

Under the Civil War Research Center Alternative, the park boundaries could be adjusted to incorporate significant battle-related lands identified in the boundary assessment. If these lands were added to the park through a fee-simple acquisition, the types of use could change on several hundred acres of agricultural lands in Greene and Christian Counties. If the lands were placed under easements or cooperative agreements, the lands could remain in agricultural production, but these actions could limit the types of use and development that could occur on these lands in the future. Adjustments to the park boundaries could result in a minor to moderate long-term, adverse impact on traditional uses of the lands identified in the boundary assessment.

*Cumulative Impacts.* A variety of human actions have affected and continue to affect regional land use. Since its designation as a national battlefield, land use has changed and diversified from traditional agricultural uses to increased residential and commercial use, resulting in large part from population growth and economic diversification.

The Civil War Research Center Alternative could contribute a minor to moderate, long-term, adverse component to cumulative impacts on traditional land uses by taking

additional lands out of agricultural production.

**Conclusion.** The Civil War Research Center Alternative would have a minor, long-term, adverse impact on land use in the region. This adverse impact would not constitute impairment of park resources and values.

### **Impacts on Revenue Base – Local General Government**

Under the Civil War Research Center Alternative, the park boundaries could be adjusted to incorporate significant battle-related lands identified in the boundary assessment. If these lands were added to the park through a fee-simple acquisition, this action would remove several hundred acres of agricultural lands from the tax rolls of Greene and Christian Counties. If the lands were placed under an easement or a cooperative agreement, the lands could remain in agricultural production, but these actions could limit the types of development that could occur on these lands. Adjustments to the park boundaries could result in a minor, long-term, adverse impact on the revenue bases of Greene and Christian Counties.

*Cumulative Impacts.* A variety of human actions have affected and continue to affect visitor use at the park. Since its designation as a national battlefield, the local economy has diversified from an agricultural base and the regional population has greatly increased. Urban growth and suburban development have slowly encroached on the park. Farmlands have increasingly been converted to residential or commercial use. The net result of population growth and increased residential and commercial development has been an increase of the revenue base of Greene and Christian Counties.

The Civil War Research Center Alternative could contribute a negligible, long-term, adverse component to cumulative impacts on the counties' revenue bases by potentially eliminating or limiting production or development on these lands.

*Conclusion.* The Civil War Research Center Alternative would have a minor, long-term, adverse impact on the revenue base of Greene and Christian Counties. County revenues could be reduced as a result of adjustment to the park boundaries. This adverse impact would not constitute impairment of park resources and values.

### **UNAVOIDABLE ADVERSE IMPACTS**

There would be some unavoidable adverse impacts to visual and scenic resources and to the visitor experience resulting from increased visitation and recreational use.

No additional access points are proposed. Construction of additional parking, however, could result in the loss of vegetation.

Under the Civil War Research Center Alternative, construction of permanent equestrian parking and additional access points could result in the loss of vegetation. Development at these points would also preclude the possibility of restoring native plant species and habitat.

Under the Civil War Research Center Alternative, no additional access points are proposed. Construction of additional parking, however, could result in the loss of vegetation.

### **IRRETRIEVABLE AND IRREVERSIBLE COMMITMENTS OF RESOURCES**

Irretrievable commitments are actions that result in the loss of resources but only for a limited period of time. Irreversible commitments of resources are actions that result in the loss of resources that cannot be reversed.

Under the Civil War Research Center Alternative, there would be no irretrievable commitment of resources.

Some vegetation would be irretrievably committed as a result of construction of additional parking facilities.

Some vegetation would also be irretrievably committed as a result of construction of additional access, parking, and trails, and some vegetation would be irretrievably committed as a result of construction of additional parking facilities.

None of the alternatives evaluated in this document would result in irreversible commitments.



## **RELATIONSHIP BETWEEN THE SHORT-TERM USE OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY**

Under the No-Action Alternative, the gradual rehabilitation of the battlefield landscape would result in relatively minor disturbance of soils, vegetation, and habitats but would yield long-term benefits to the cultural landscape, vegetation, wildlife, special status species, and recreation and leisure.

Under the preferred alternative, rehabilitation of the battlefield landscape and construction of additional parking facilities and trails would result in relatively minor disturbance of soils, vegetation, and habitats. However, this alternative would yield long-term benefits to the cultural landscape, visitor use and experience, scenic resources, vegetation, wildlife, special status species, recreation and leisure, and park access and transportation.

Under Alternative C, rehabilitation of the battlefield landscape and construction of additional parking facilities, trails, and access points would result in relatively minor disturbance of soils, vegetation, and habitats. However, this alternative would yield long-term benefits to the cultural landscape, visitor use and experience, scenic resources, vegetation, wildlife, special status species, recreation and leisure, and park access and transportation.

Under the Civil War Research Center Alternative, rehabilitation of the battlefield landscape and construction of additional parking facilities, trails, and research excavations would result in relatively minor disturbance of soils, vegetation, and habitats. However, the alternative would yield long-term benefits to the cultural landscape, visitor use and experience, scenic resources, vegetation, wildlife, special status species, recreation and leisure, and park access and transportation.



## **Consultation and Coordination**





## CONSULTATION AND COORDINATION

### CONSULTATIONS

In May 1999, as part of the scoping and public involvement initiative for this project, the NPS's Denver Service Center planning team and Wilson's Creek National Battlefield staff conducted two public meetings with representatives of local organizations, park neighbors, and members of the general public. The times and locations of the meetings were published in local newspapers, broadcast on radio and television stations, and published in the Federal Register. Invitations to participate were mailed to more than 100 leaders and representatives of local community groups. The goals of these meetings were

- to inform the public of the purpose of the management plan
- to explain the process necessary to complete the plan
- to solicit public input on issues facing the park and the long-term management objectives for the park

Other meetings were held with representatives of state and local government agencies and from subject matter specialists to discuss current and proposed activities that could affect the park, to identify opportunities for cooperative regional planning, and to solicit recommendations on the management of park resources. Meetings with potential cooperators and stakeholders were held as well. In August 1999, park managers conducted a workshop with subject-matter specialists to discuss park resources and significance.

The Wilson's Creek newsletter has been used to inform the public about developments in the planning process,

including the development of management alternatives and the maps of the management areas. In March 2000, the park managers held a public meeting to present the draft management alternatives and the maps of the management areas.

The planning team has consulted with the U.S. Fish and Wildlife Service and the Missouri Department of Conservation. The Department of Conservation provided the planning team with a list of special status species found at Wilson's Creek National Battlefield. The team has also consulted with the State Historic Preservation Officer for Missouri.

### AGENCIES AND ORGANIZATIONS RECEIVING THE DRAFT GMP/EIS

#### Federal Agencies and Officials

Environmental Protection Agency,  
Region 7  
Honorable Representative Roy  
Blunt, U.S. Congress  
Honorable Senator Christopher  
Bond, U.S. Congress  
Honorable Senator Jean Carnahan,  
U.S. Congress  
Mark Twain National Forest  
National Park Service, Chickamauga  
and Chattanooga NMP  
National Park Service, Midwest  
Archeological Center  
National Park Service, Pea Ridge  
National Military Park  
National Park Service, Fort Scott  
National Historic Site  
Springfield National Cemetery  
U. S. Army, Fort Leavenworth,  
Kansas  
U.S. Army, Fort Leonard Wood,  
Missouri

U.S. Army, Fort Sill, Oklahoma  
U.S. Fish and Wildlife Service

### **State Agencies and Officials**

Arkansas State Historic Preservation  
Program  
Fort Davidson State Historical Site  
Mine Creek Battlefield Site  
Historical Site  
Missouri Department of  
Conservation  
Missouri Department of Highway  
and Transportation  
Missouri Department of Natural  
Resources  
Missouri Division of Tourism  
Missouri State Historic Preservation  
Officer  
Missouri State Representative Jim  
Kreider  
Missouri State Representative  
Norma Champion  
Missouri State Representative  
Morris Westfall  
Missouri State Senator Doyle  
Childers  
Missouri State Senator Roseann  
Bentley  
Prairie Grove State Historical Site

### **Local and Regional Agencies, Organizations, and Officials**

Battlefield Volunteer Fire  
Department  
Blue and Gray Education Society,  
Danville, Virginia  
Brookline Volunteer Fire  
Department  
Christian County Commissioner  
Christian County Planning and  
Zoning Department  
Christian County Sheriff  
Christian County Highway  
Department  
City of Battlefield, the Mayor

City of Battlefield, Planning and  
Zoning Department  
City of Republic, City Administrator  
City of Republic, the Mayor  
City of Springfield, the Mayor  
City of Springfield, City Manager  
City of Springfield, Planning  
Department  
Civil War Round Tables of Ozarks,  
Kansas City, St. Louis, Chicago  
General Sweeney's Museum of Civil  
War History, Dr. Tom Sweeney  
Greater Ozarks Audubon Society  
Greene County Archives  
Greene County Commissioners  
Greene County Highway Department  
Greene County Historical Society  
Greene County Planning and Zoning  
Greene County Sheriff  
Historical Museum for Springfield  
and Greene County  
KAMO Power Company  
KTTS News, Springfield  
Mine Creek National Battlefield  
Foundation  
Missouri Civil War Reenactors  
Missouri Equine Council, Inc.  
National Parks Conservation  
Association  
Nixa Volunteer Fire Department  
Ozark Cycling Club  
Ozark Electric Cooperative  
Ozark Greenways  
Ozark Underground Lab  
Pea Ridge National Battlefield  
Foundation  
Republic Chamber of Commerce  
Republic Public Schools  
Sierra Club, Ozarks Chapter  
SMSU Council of Governments  
Southern Cherokee Nation  
Southwest Missouri Advisory  
Council of Governments  
Southwest Missouri Indian Center  
Springfield Chamber of Commerce



Springfield Convention and Visitor  
Bureau  
Springfield Cycling Club  
Springfield Park Board  
Springfield Public Schools

Wilson's Creek Landowners'  
Association  
Wilson's Creek National Battlefield  
Association



**Appendixes**  
**Bibliography**  
**List of**  
**Preparers**  
**and**  
**Consultants**







# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Missouri Ecological Services Office  
608 East Cherry Street  
Room 200  
Columbia, MO 65201  
Phone: (573) 876-1911 Fax: (573) 876-1914

June 30, 1999

David M. Lee  
Natural Resource Specialist  
National Park Service  
Denver Service Center  
12795 W. Alameda Parkway  
Denver, Colorado 80225-0287

RE: Wilson's Creek National Battlefield Park  
D5019 (DSC-RP)  
WICR 400 02

Dear Mr. Lee:

This letter is in reference to your request we received on May 18, 1999, for information on fish and wildlife resources that occur at Wilson's Creek National Battlefield Park in Greene County, Missouri. This response is provided by the U.S. Fish and Wildlife Service under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4327), and the Endangered Species Act of 1973, (16 U.S.C. 1531-1543).

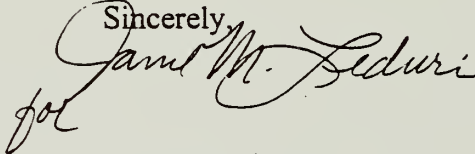
Two federally listed endangered species occur in Wilson's Creek National Battlefield Park. The Missouri bladderpod (*Lesquerella filiformis*) is an annual plant from the mustard family. The species presently occurs on limestone glades and outcrops in Dade, Greene, Christian and Lawrence counties. Yellow flowers occur at the tops of the 4-8 inch tall plant in April and May. The Missouri bladderpod occurs in shallow soils on limestone glades, outcrops in pastures and rarely in rocky open woods. The plant is a winter annual, germinating in the fall and overwintering in the form of basal rosettes. Plants send up flowering stems in late April, and flower, fruit and senesce by the end of June.

The Gray bat (*Myotis grisescens*) occupies a limited geographic range in limestone karst areas of the southeastern United States, including Missouri. With rare exception, the gray bat roosts in caves year-round. In winter, most gray bats hibernate in vertical (pit) caves with cool, stable temperatures below 10 degrees Celsius. Summer caves, especially those used by maternity colonies, are nearly always located within a kilometer (0.6 mile) of rivers or reservoirs over which bats feed. The summer caves are warm with dome ceilings that trap body heat. Most gray bats migrate seasonally between hibernating and maternity caves, and both types of caves are

located in Missouri. Gray bats are active at night, foraging for insects over water or along shorelines, and they need a corridor of forest riparian cover between roosting caves and foraging areas. They can travel as much as 20 kilometers (12 miles) from their roost caves to forage.

If you have not already done so, we recommend you contact the Policy Coordination Section of the Missouri Department of Conservation (MDC), P.O. Box 180, Jefferson City, Missouri 65102-0180, for information concerning state-listed rare and endangered species. All federally-listed species are also state-listed, so any information you receive from MDC will likely assist you in determining whether a federally-listed species may be affected by your project.

We appreciate the opportunity to provide the enclosed information. Should you have questions, or if we can be of any further assistance, please contact Andy Roberts at (573)876-1911, ext. 110.

Sincerely,  
for

R. Mark Wilson  
Field Supervisor

cc: MDC; Jefferson City, MO (Attn: Gary Christoff)  
MDC; Jefferson City, MO (Attn: Amy Salveter)

ADR:ar:990455



OPTIONAL FORM NO. 10-90

## FAX TRANSMITTAL

# of pages: 1

To: Dorothy Butler	FROM: David Lee
Work Agency: MO DOC	Phone: 303 969 2261
Fax: 373 526 5587	Fax: 303 969 2736
NSN 7540-01-317-7368	5099-101 GENERAL SERVICES ADMINISTRATION

D5019 (DSC-RP)  
WICR 400 02

Ms. Dorothy Butler  
Heritage Coordinator  
Missouri Department of Conservation  
POB 180  
Jefferson City, MO 65102 0180

May 14 1999

Dear Ms. Butler:

Reference: Wilson's Creek National Battlefield Park

Subject: Development of General Management Plan

The National Park Service is initiating the development of a General Management Plan for Wilson's Creek National Battlefield Park. The planning process includes the environmental analysis and the preparation of an environmental impact statement.

In order to assess impacts, I request a list of Missouri threatened, endangered, proposed, candidate, or plant and animal species of concern, and any designated critical habitat that might occur at this locality (map attached).

If you require additional information, please contact me by telephone at 303-969-2261. I can be reached via email at david\_m\_lee@nps.gov

Thank you for your assistance.

Sincerely,

SIGNED

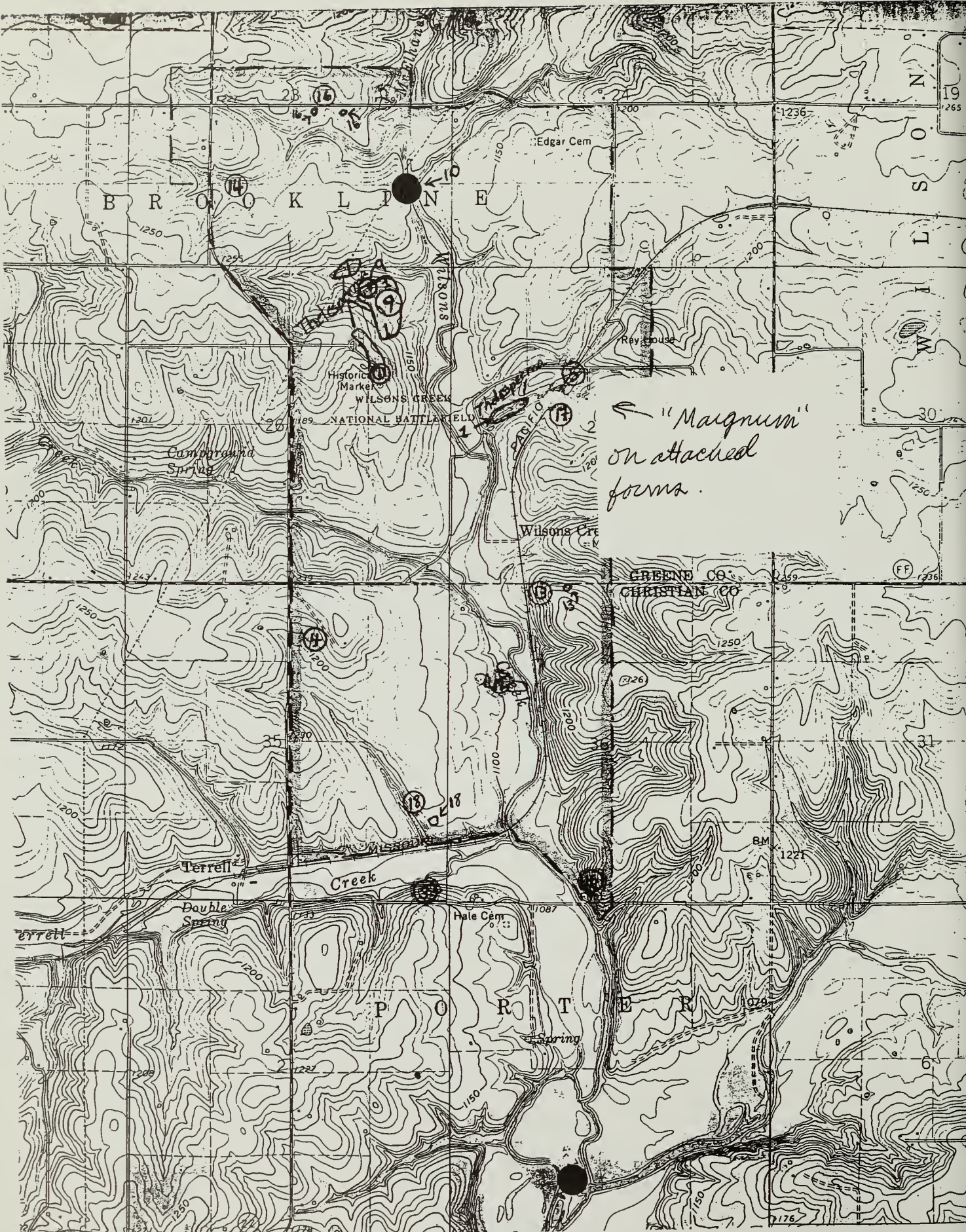
David M. Lee  
Natural Resource Specialist

Enclosure

cc:  
Mark Wilson w/enc.

cc:  
WICR-Sullivan

DSC IDS:Dlee:km:5/14/99:2261:WICR





**WILSON'S CREEK NATIONAL BATTLEFIELD  
TRANSPORTATION ISSUES  
FOR  
GENERAL MANAGEMENT PLAN**

---

**January 17, 2001**

**National Park Service  
Denver Service Center**



## **WILSON'S CREEK NATIONAL BATTLEFIELD TRANSPORTION ISSUES FOR GMP**

The following conclusions and recommendations about on- and off-site transportation issues affecting the Wilson's Creek National Battlefield are developed from a May 15 and 16, 2000 visit to the park, interviews with officials of various local, regional, and state transportation and planning agencies, and a review of available information and planning documents for the area.

### **CONCLUSIONS**

There appear to be no major transportation or transportation-related issues that presently adversely affect either park resources or the safety and enjoyment of park visitors. Access to the battlefield and on-site circulation and parking facilities seem to adequately accommodate present visitation and use.

Various agency officials responsible for traffic planning in the area do not foresee major access issues, even with the recent and projected levels of development in the area. In addition, park staff indicated that present park transportation facilities will be able accommodate future park demand, including that generated by the new library.

There are some transportation and traffic-related actions, however, that the park should undertake in cooperation with adjacent municipalities and local, regional and state agencies to improve accessibility, enhance the safety and enjoyment of park visitors, and permanently protect the park's edges and visual character. The most significant of these actions include:

1. Providing consistent, identifiable directional and informational signage along major access routes to the battlefield.
2. Evaluating the desirability of maintaining the present mix of vehicular, bicycle, pedestrian, and equestrian use of the tour route, particularly non-battlefield recreational use.
3. Coordinating greenway trails and off-street /on-street bicycle facilities to increase safety and encourage alternative mode access to the park.
4. Legislating a protective battlefield view plane preservation ordinance and developing specific architectural design guidelines as outlined in area growth management and land use and transportation plans to minimize visual impact from key battlefield viewing locations.

These and other related actions are more fully described below as Transportation Recommendations. Importantly, most of these are not 'park only' actions, but rather are actions to be jointly implemented in cooperation with 'outside' agencies and jurisdictions. The battlefield staff will need to become active participants in the planning processes and decision-making of local, regional, and state agencies and jurisdictions. Fortunately, staff has begun to become involved, and it appears that the agencies and jurisdictions are aware of the importance of protecting the park resource in their actions.

Each issue should be considered in relation to achieving the objectives contained within the GMP alternatives.

## TRANSPORTATION RECOMMENDATIONS

### Improve Access to the Battlefield

#### A. Battlefield Information and Signage

Information about the battlefield and directions for getting to it could be expanded and improved to facilitate and enhance the visitor experience. There is minimal information about the battlefield provided at key locations along major transportation routes. This increased awareness could attract additional visitors to the battlefield that may not be aware of it. In addition, there was concern expressed about the adequacy and consistency of directional signage to the battlefield. Recommendations include:

1. Coordinating with MODOT for the placement of first order highway guide signing for the battlefield as a major traffic generator (250,000 annual visitation). Primary locations would be along 1-44, US 160, US65, US 60, the James River Freeway, and State Highway 13. Similarly, provide second and third order signing along State Highway 14, Highways MM and ZZ, and FRI 82. This signage should be coordinated with the MODOT "5h Logo Program."
2. The connection of the James River Freeway to 1-44 will make it possible for airport traffic, south bound traffic to Branson and the Ozarks, and east/west through traffic to pass quickly through the Springfield area without being aware of its opportunities and attractions. Conversely, awareness of and access to regional attractions, and particularly Wilson's Creek National Battlefield, because of its proximity to the freeway extension, could be significantly enhanced by providing visitor information at the Regional Community Gateways and Arrival Points identified in the *Vision 20120 Plan - Community Physical Image Analysis*.

These gateways and arrival points are important community physical image locations' where information about important regional attractions like the battlefield can be provided to travelers and visitors to the area. Gateway locations include the airport and James River Freeway interchanges with 1-44 and US 65/160; arrival points include freeway interchanges with US 60, State Highway 13 (Kansas Expressway), Campbell Street, and Glenstone Avenue.

3. Developing a 'front door' to the battlefield with special design treatments at the Highway ZZ/FR 1 82 intersection and continuing to the parking area/visitor's center.

This would enhance the arrival at the battlefield, increase the visual significance of the battlefield commensurate with its importance, and stimulate excitement about the upcoming battlefield experience. With ownership of all quadrants of the intersection, an appropriate and exciting arrival to the battlefield, including battlefield equipment, statuary, flags, graphic art, etc., can be provided.

4. Utilizing a park advisory/information radio station to provide travelers with advance real time information about the battlefield, special events, traffic conditions/access route suggestions, park regulations, and fees.

## ***B. Access to the Battlefield***

Extensive population growth in the region (12.7% population increase, 1990-1996; three times the statewide growth rate) and projections for large population increases over the next thirty years, particularly in the south and west portions of the Urban Service Area, will generate increased traffic on area highways and local roads.

The in-process MODOT Statewide Long-Range Transportation Plan will focus on corridors of statewide interest, rather than local improvements. Within the area of the battlefield, two projects will be identified: a US 60 bypass location study for corridor preservation; and widening of existing Highways M-and MM (between I-44 and Highway ZZ). MODOT is not anticipating any other long-term improvements in the area.

Local access routes to the battlefield are two-lane roadways classified as primary arterials (Highways MM and ZZ) and intersecting secondary arterial FRI 82. Arterials are primarily intended to move high and moderate traffic volumes, respectively, at moderate travel speeds. Design guidelines for future development of primary arterials indicate four travel lanes with a 16-foot median and turning lane at major intersections (*Major Thoroughfare Plan*, Springfield MPO, February 2000).

1. With increasing travel demand in this portion of the Urban Service Area, increasing park visitation, and the poor sight distance along Highway ZZ south of FR 182, the left turn from southbound Highway ZZ on to eastbound FRI 82 for battlefield visitors will become increasingly dangerous. A protected left-turn lane should be provided to eliminate turns from the southbound travel lane and overcome the poor sight distance from the intersection. Based upon intersection accident data (to be obtained), this intersection improvement may be warranted even before traffic volumes require widening.
2. Install improved directional signing along the primary local access routes to increase driver awareness and improve safety by providing more timely route information and eliminate indecision at intersections along the access route.
3. With increased local recreational use of the battlefield's transportation system - the development of bicycle paths and/or on-street facilities (bicycle lane, wide shared lane, or bicycle lane on shoulder) along major access routes will provide safe access.

These should provide connection to the proposed South Creek/Wilson's Creek greenway trail to facilitate pedestrian and bicycle alternative mode access to the battlefield and continuing to the south (*Ozark Greenways and Vision 20120 Plan -Parks, Open Space, and Greenways plan Element*).

## ***C. Enhance the Battlefield Tour Route Experience***

Although conflicts between existing vehicular, bicycle, pedestrian, and equestrian use of the battlefield tour route are minimal, it may become necessary to evaluate the desirability of maintaining the present mix of uses and the utilization of the battlefield transportation system. Similarly, it may also become desirable to determine the appropriate mix of battlefield-related experience and local recreational use of the park.



With increased utilization, the one-way tour route roadway (12-foot vehicular lane, 6-foot walking/bicycling lane) may eventually provide neither the optimum battlefield interpretive experience, nor the safest means to experience the park. Increased utilization will potentially create the following tour route conflicts:

- Pedestrian and Bicycle Mix
- Bicycle and Auto Mix
- Equestrian Trailer Use

Unfortunately, there is no present or projected park use data on the characteristics and use levels of the transportation facilities within the site, and thereby no data to determine the immediacy of conflicts and safety issues contained in these recommended actions. Rather, they are based upon informal observation of use, staff comments, and 'best transportation practices' for safe use and enhanced visitor experience at other NPS facilities and in public park and recreational planning experience. Collection of data should begin immediately to identify issues and determine trends in conflicts.

1. Separation of Pedestrian and Bicycle Users. The speed differential between increasing numbers of pedestrians and bicyclists will begin to cause conflicts within the 6 foot tour route lane, particularly as recreational joggers and fast speed cyclists also begin to increasingly use the tour route lane. This increased speed differential will cause additional conflicts. Because the 6 foot lane will become inadequate, the growing pedestrian and bicycle use will eventually 'fill' the pedestrian/bicycle lane and 'spill' out into the auto travel lane causing additional conflicts with passing autos. These conflicts will detract from the enjoyment of the battlefield experience by interpretive pedestrians and bicyclists.

Separating pedestrians onto primarily off-trail route trails will increase user safety and improve the overall interpretive experience for hikers. The battlefield pedestrian trails could link existing trail segments, including the Wire Road, with new trails located along battlefield troop movement routes for an enhanced and unique interpretive experience. Both loop trails and linear destination trails should be provided for varied experience and accommodation of user ability. Trail head auto 'pick-up' locations along the tour route should be provided at overlooks. The on-site pedestrian trails could also connect to the proposed South Creek/Wilson's Creek greenway trail for enhanced regional accessibility (projected by Ozark Greenway to be approximately 500 additional users per week from adjacent development).

Continued utilization of the tour route facility by joggers and fast speed cyclists should be evaluated for consistency with park GMP and visitor experience objectives. Regardless, interpretive bicyclists should have priority use of the 6-foot tour route lane during peak visitor user times. Faster speed, non-interpretive, recreational joggers and speed cyclists should be directed to non-peak times when battlefield bicycle use is lower.

2. Relocation of Equestrian Trailer Use. Although equestrian trailers on the tour route do not present a significant safety issue, the desirability of increased numbers of slow moving trailers may adversely affect the visitor experience of the battlefield, particularly as the number of non-interpretive recreational riders increase due to the closing of many of the equestrian trails and riding opportunities in the area due to urban development of open lands.

Designation of the 'overflow' area south of the Ray House, with access from the adjoining county road to the east, would eliminate trailer use of the tour route and its effect on the visitor experience.

This would create other park administrative and management considerations, which would need to be evaluated for consistency with park GMP objectives.

#### ***D. Protection of the Park Resource***

Of particular concern to the long-term protection and preservation of the pristine quality of the battlefield site is prevention of encroachment of sprawl into the view sheds of key battlefield view locations on off-site adjacent lands. Because of the screening afforded by vegetation and the ridgelines, there are approximately 400-500 acres outside the park that are critical to preserve. Preservation will be difficult as development pushes near the site. Similarly, there is the need to guide growth away from sensitive historic resources and control incompatible development on lands around the battlefield that would adversely affect, or 'cheapen' the historic experience (*Vision 20/20 Plan - Historic Preservation Element*).

In order to protect the park resource, WCNB must become an active participant in the integrated transportation, land use and utilities planning decision-making of local and regional planning agencies and jurisdictions. Land development should be planned and regulated to make intensive use of sites served by highways and other roads. Lastly, staff must be involved in influencing the implementation of these planning decisions in order that they support and enhance the park resource, not bleed it away. Specific actions for staff involvement include:

1. Implementing the land use planning recommendations in the Vision 20/20 Growth Management Plan, designating land around the battlefield as Rural Area. The intent would be to retain rural areas as open and agricultural, reducing sprawl, preserving desirable rural qualities, promoting appropriate rural economic activity, and limiting inappropriate land uses.
2. Implementing the transportation decisions defined in the Vision 20/20 Transportation Element. Transportation facilities are planned and coordinated by the City of Springfield, Greene County, and the Missouri Department of Transportation through the Springfield Area MPO.
3. Creating a Historic Zoning District to regulate housing density within 1/4 mile of the Battlefield, limiting lot sizes and defining design guidelines that minimize visual impact and limit views to external 'off-site' development, specifically placement, height, color and materials.

#### **METHODOLOGY**

The findings and recommendations of this transportation study for the Wilson's Creek National Battlefield were developed from conversations with NPS staff, a site visit on May 15 and 16, 2000, meetings with state and local officials, and review of available reports and documents. Persons consulted and references used in the development of this report are included below:

##### **NPS Staff**

Richard A. Lusardi, Superintendent, Wilson's Creek National Battlefield  
Gary P. Sullivan, Chief of Resources Management, Wilson's Creek National Battlefield  
John M. Sutton, Chief Ranger, Wilson's Creek National Battlefield  
Tom Thomas, Lead Planner, Denver Service Center

## State and Local Officials

Fred May, Director, Department of Planning and Development, City of Springfield, MO  
Teri A. Whitmore, Senior Planner – Transportation, City of Springfield, MO  
Dean P. Thompson, City Administrator, City of Republic, MO  
William E. Robinett, Transportation Planner, Greene County Highway Department,  
Springfield, MO  
Becky Baltz, Transportation Planning Manager, Missouri Department of Transportation  
(District 8), Springfield, MO  
Jay Waggoner, Project Manager, Missouri Department of Transportation (District 8),  
Springfield, MO  
Judith Deel, Archaeologist, Missouri Department of Natural Resources (SHPO Office),  
Jefferson City, MO  
Alana Owen, Southwest Missouri Council of Governments, Springfield, MO  
Terry Whaley, Executive Director, Ozark Greenways, Incorporated, Springfield, MO

## Reference Materials

City of Springfield, MO, *Growth Trends Report 1990 – 1999*, June 1999.  
City of Springfield, MO, *Major Thoroughfare Plan*, February 2000.  
Missouri Department of Transportation, *Traffic Welcome/Entrance Signage for Missouri  
State Parks* (Fifth Logo Signing Program and Major Traffic Generator Signing),  
February 1998.  
Missouri Department of Transportation, *General Pedestrian and Bicycle Guide*, undated.  
NPS, Wilson's Creek National Battlefield, *Draft Environmental Impact Statement  
General Management Plan*, May 2000.  
NPS/DSC, *Wilson's Creek National Battlefield Master Plan*, October 1976.  
NPS/DSC, Wilson's Creek National Battlefield, *Draft General Management  
Plan/Environmental Impact Statement*, undated.  
Springfield-Greene County Vision 20/20 Comprehensive Plan, *Growth Management and  
Land Use Plan*, October 1999.  
  
Springfield-Greene County Vision 20/20 Comprehensive Plan, *Community Physical  
Image Analysis*, February 2000.  
Springfield-Greene County Vision 20/20 Comprehensive Plan, *Incorporating Greenways  
into Development*, undated.  
Springfield-Greene County 20/20 Vision Plan, *Historic Preservation Element*, February  
2000.  
Springfield-Greene County 20/20 Vision Comprehensive Plan, *Parkways. Open Space,  
and Greenways Plan Element*, May 1998.  
TransSystems Corporation, *Draft Springfield-Branson Corridor Transportation Study –  
Phase II Conclusions and Recommendations*, April 2000.  
University of Minnesota, *Wilson's Creek National Battlefield Visitor Survey*, March  
2000.



## COST ESTIMATES

<b>Alternative</b>	<b>Actions</b>	<b>Costs</b>
<b>Alternative A – Continuation of Existing Conditions</b>	1 FTE – Wilson’s Creek Water Quality 2 FTE – Expand Educational Programs 2 FTE – Enhance Endangered Species Habitat	<b>Total - \$314,000</b>
<b>Alternative B – The Preferred Alternative</b>	<ul style="list-style-type: none"> <li>• 20 additional equestrian parking spaces adjacent to existing parking area</li> <li>• 11 FTEs - Enhance Wilson’s Creek water quality, expand educational programs, enhance cultural landscape, endangered species habitat, staff for Sweeney Museum</li> </ul>	\$234,464           <b>Total - \$882,464</b>
<b>Alternative C – Wilson’s Creek Civil War Research Center</b>	<ul style="list-style-type: none"> <li>• 20 additional equestrian parking spaces adjacent to existing parking area</li> <li>• 11 FTEs - Enhance Wilson’s Creek water quality, expand educational programs, enhance cultural landscape and endangered species habitat, staff for Sweeney Museum</li> </ul>	\$234,464           648,000 <b>Total - \$882,464</b>

## BIBLIOGRAPHY

- Bailey, Robert G.  
 1995 *Description of the Ecoregions of the United States*. United States Department of Agriculture, Forest Service. Miscellaneous Publication 1391. Washington, D.C.
- BRW/URS  
 2000 *Wilson's Creek National Battlefield Transportation Issues for the General Management Plan*. Prepared for the National Park Service.
- Dahl, Thomas E.  
 1990 *Wetland Losses in the United States — 1780s to 1980s*. U.S. Department of the Interior, Fish and Wildlife Service. Washington, DC. Jamestown, ND: Northern Prairie Wildlife Research Center Home Page <http://www.npwrc.usgs.gov/resource/otherdata/wetloss/wetloss.htm> (Version 16JUL97)
- Federal Water Pollution Control Administration (FWPC)  
 1969 "James River-Wilson's Creek Study. Springfield, MO." Kerr Water Research Center. Ada, OK.
- Kondratieff, Boris C.  
 1990 Preliminary report for Dr. Del W. Nimmo on the status of the benthic macroinvertebrate communities of Wilson's Creek and Skeggs Branch, Wilson's Creek National Battlefield
- Missouri Department of Conservation  
 1986 *Wilson's Creek National Battlefield, A Plan for the Restoration of the Historic Vegetation*. Greg Gremaud, Natural Heritage Biologist, Natural History Section. Jefferson City, MO. December
- 2000 Response to request for state listed and species of concern from Dorothy Butler, Heritage Coordinator, Jefferson City, MO, to Superintendent, Wilson's Creek National Battlefield. March 7.
- National Park Service, U.S. Department of the Interior  
 2000 "Archeological Survey." Wilson's Creek National Battlefield. National Park Service, Midwest Archeology Center.
- 1977 "(Draft) Historic Landscape Restoration Action Plan." Wilson's Creek National Battlefield.
- 1978 Historical Base and Ground Cover Map, Wilson's Creek National Battlefield, Green and Christian Counties, MO. Edwin C. Bearss, Supervisory Historian. National Park Service. Denver Service Center.
- 1988 *Trail Plan for Wilson's Creek National Battlefield*. On file at the park.
- 1988 *National Park Service Management Policies*. Washington, D.C.
- 1992 "Statement for Management." Wilson's Creek National Battlefield. On file at the park.
- 1993 *Guiding Principles of Sustainable Design*. Denver Service Center.

- 1996 “(Draft) Wilson’s Creek National Battlefield Interpretive Plan.” On file at the park.
- 1997 *National Park Service Strategic Plan*. Washington, D.C.
- 1999 “(Draft) Archeological Overview and Assessment.” Wilson’s Creek National Battlefield. On file at the park.
- 2000 “(Draft) Interim Resources Management Plan for Wilson’s Creek National Battlefield.” On file at the park.
- “(Draft) Cultural Landscape Report for Wilson’s Creek National Battlefield.” On file at the park.
- 2001a *National Park Service Management Policies*. Washington, D.C.
- 2001b *Wilson’s Creek National Battlefield: 1999–2001 Visitor Use Study*. On file at the park.
- Springfield, City of
- 1997 *Springfield-Greene County Vision 20/20 Concept Plan: An Interim Plan Guide, Creating the Future*. Springfield Planning and Development Department. Springfield, MO.
- 1998 *Springfield-Greene County Vision 20/20 Comprehensive Plan: Parks, Open Space and Greenways Element, Creating the Future*. Springfield Planning and Development Department. Springfield, MO.
- U.S. Fish and Wildlife Service
- 1999 Memorandum from R. Mark Wilson, Field Supervisor, Missouri Ecological Services Office, 608 East Cherry Street, Room 200, Columbia, MO 65201, to David M. Lee, Natural Resource Specialist, National Park Service, Denver Service Center, Denver, CO. June 30.
- Wenger, Seth
- 1999 “A Review of the Scientific Literature on Riparian Buffer Width, Extent, and Vegetation. Prepared for the Office of Public Service and Outreach, Institute of Ecology, University of Georgia.” Athens, GA.



## PREPARERS AND CONSULTANTS

### PREPARERS

Name	Role	Degree(s)	Years Experience
<b>Christopher Davis</b> NPS/DSC	Natural resource impact analysis, GMP/EIS preparation and editing	B.A., Biology M.A., Biology	6 years experience, USFWS, NPS, U.S. Army Corps of Engineers
<b>Kate Hammond</b> NPS/HFC	Interpretive Planner, visitor use and experience	B.A., History	5 years experience, NPS
<b>David Lee</b> NPS/DSC	Natural resource impact analysis	B.S., Biology	20 years experience, BOR, NPS
<b>Jeff Patrick</b> NPS/WICR	Historical overview (co-author)	B.A., History M.A., History	10 years experience, NPS
<b>Connie Slaughter</b> NPS/WICR	Historical overview (co-author)	B.A., History M.A., History	10 years experience, NPS
<b>Gary Sullivan</b> NPS/WICR	Natural resource consultation, document review	M.A., History	19 years experience, NPS
<b>Thomas A. Thomas</b> NPS/DSC	Team Captain, GMP/EIS preparation, cultural resource impact analysis	B.A., History M.A., History Ph.D., History	10 years experience, NPS

### CONSULTANTS

	Denver Service Center
Richard Lusardi Superintendent Wilson's Creek National Battlefield	Frank Williss Cultural Resources Technical Specialist Denver Service Center
Sandra Washington Chief of Planning and Compliance Midwest Regional Office	Ric Alesch Project Manager Denver Service Center
David Kreger Natural Resources Technical Specialist	John M. Sutton Park Management

## INDEX

- administration, iv, ix, 27, 34, 38, 41-42, 117
- affected environment, 41, 52, 59
- alternatives, iii-iv, vii-ix, xiii, 7, 8, 9, 13, 14, 18, 19, 22, 23, 27, 30, 40-42, 59, 61-62, 94, 99
- archeological resources, 48, 63, 64-65, 75, 85
- archival collections, 66, 76, 86-87
- Battle of Wilson's Creek, iv-v, viii, 4, 9, 11-13, 15, 19-21, 27, 30, 32, 40-41, 42, 48-49, 55, 65, 67, 73, 77-78, 87-88
- Bloody Hill, ix, 3, 11-12, 16-17, 34, 38, 40, 47-48, 51
- boundary adjustments, viii, 9, 13
- cooperative planning, iii, 23
- cultural resources, viii, 4, 15, 19, 29, 59, 63
- environmental consequences, viii, 20, 41, 59
- environmental justice, 7
- General Sterling Price, 15
- historic structures, 4, 19, 62, 75, 84
- impact topics, 4, 7, 41, 61
- impacts, iii, vi-viii, xiii, 3, 4, 7-9, 14, 21, 23, 33, 36-37, 41, 43, 59-94
- impairment, 62, 64-94
- land use, 14, 83, 93
- legislation, iii, 14, 15, 18, 62, 66
- library, vi, ix, 23, 27, 30, 34, 36, 38, 47, 51, 61, 66, 69, 76, 86
- management prescriptions, iv, 8, 27, 30, 33, 37
- museum collections, 66, 76, 86
- natural resources, iii-iv, viii, 3, 4, 20, 24, 27-30, 42, 47, 59-60, 63, 77
- operations, 13, 27, 60, 61
- partnerships, iii, 22, 47, 60
- population, iii, 7, 52, 55, 66-70, 74, 77-78, 81, 83-84, 86-88, 91-93
- Ray House, ix, 12, 14, 15, 17, 34, 38, 41, 47-49, 51, 56, 64, 75, 84, 87
- research, vi-vii, ix, 13, 19, 20, 23, 27, 29-30, 34, 36, 38, 40-41, 43, 47, 51, 61, 63, 66, 69, 76, 84-92-95
- riparian areas, 81, 91
- socioeconomic environment, 60
- staffing, iv, ix, 30
- threatened and endangered species, iv-v, vii, 29-30, 63
- tourism, 55, 100
- vegetation, vi, vii, 4, 18, 20-21, 28, 30, 33, 37, 43, 48, 52-53, 64-65, 69-71, 78-81, 88-91, 94-95
- visitor center, iii, ix, 3, 14-15, 23, 27, 30, 34, 38, 47, 49, 51, 54, 61, 66, 67-69, 74, 77-78, 81, 86-87, 91
- visitor experience, iii-vi, viii, ix, 3-4, 8, 14-15, 20, 22, 24, 27, 30, 32, 36, 41-42, 59-60, 63, 67-68, 78, 87-88, 94
- water quality, 4, 18, 20, 53, 64, 70, 72, 79, 80, 89
- wildlife, 4, 27, 44, 54, 71, 72-73, 80-81, 90-91, 95, 99, 100



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



[illegible]